INCREASING MANAGERIAL EFFECTIVENESS THROUGH THE UTILIZATION OF COMPUTER TECHNOLOGY

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ABSTRACT

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This study examined the utilization of computer technology by managers in two organizations. The empirical reference for this study included a cluster sample of two selected organizations in Atlanta, Georgia. Percentages and tables were used to analyze the study area. Samples consisted of a population of fifty-seven managers from a statewide human service organization and thirty-one managers from a regional utility firm. A questionnaire was distributed by mail to the two respective groups for the purpose of collecting respondent's data to the research questions. Finally, statistical package for the social sciences (SPSSx) was used to analyze the data.

The major findings of this study were as follows: (1) social agency administrators use computer software for various managerial applications; (2) in selected social organizations there were principal factors such as lack of

familiarity with the computer, skills, time, and limited financial resources that adversely affected the application of specific computer technology; (3) regarding information technology, few differences were found between the two distinctly different organizations.

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CHAPTER I

INTRODUCTION

The undertaking of this study emanated from a need to better understand and address problems arising from the lack of utilization of communication software, particularly at the managerial level. This lack of utilization has caused a decrease in managerial efficiency and job output. From a historical perspective, the author discussed selected factors which contributed to the lack of utilization of computer software in human service organizations. Chapter two provides a review of selected literature pertinent to the relationship between managers, administrators, and computer technology. Chapter three indicates how data were collected and specifies the methodology of the study. The fourth chapter provides an analysis of the data, and the fifth and final chapter sets forth the conclusions and recommendations.

The purpose of this study was to examine the differences and similarities between two groups of managers and the extent to which they utilized computer technology in their respective organization.

Historical Review

The birth of high technology is a revolution that is having a profound effect on the existing order of society. The norms and patterns of society that had been in long term existence are now being revised to face the changing human environment. Consequently, the way that existing orders are viewed in society is now being forced to change. For example, many personal interactions are being replaced by the more efficient non-personal models of high technology communication avenues. Modem installation and connections have in many ways replaced the handshake. The personal computer may have replaced the face to face meeting. Henceforth, relationships between management and employees are changing due to new technological inputs. In the transient current situation, new technology is the reality to which managers and employees must adjust. The reaction of managers and administrators of social service organization to high technology is based in part upon the extent to which they utilize computers to carry out their job tasks.

In the late nineteenth century when the industrial revolution commenced, the effect of automation and high technology on social service organization managers and administrators took on both negative positive forms. An example of the negative effect includes resistance to

change, ambiguity, poor communication, and fear of job loss. An example of the positive effect of automation and high technology includes increased job satisfaction, high productivity, and better communication.

The genesis of the industrial revolution cultivated automation and high technology. Since then, there has been an increase in productivity of employees. An increase in productivity at the work place leads to more training to improve employee skills. Muller describes the employees in the midst of the industrial revolution as follows:

> The need for professional, scientific, and technical personnel grows at a faster rate than the total labor force, and these personnel require continuing training or retraining to keep their qualifications up to date.[1]

As the industrial revolution matured, the concept of technology and automation came into being. Automation, as used in this context is defined as the process of replacing human work with work done by a machine or system designed to perform a specific combination of actions automatically or repeatedly.[2] Since the inception of the industrial revolution, more sophisticated automatic machines were invented and put into use.[3]

The increase in automation at the work place ultimately caused a reduction in the work force. This caused many worker uprisings and strikes. Due to worker dissatisfaction, attempts at social reform such as the

Luddite movement of England developed. Mencher described the Luddite movement in following manner:

> The disintegration of the relationship between employer and employee was not replaced by any effective cohesion within the working class. The rapidity of change had created a large working population with neither organization, power, nor clearly defined goals for their own well-being. Organizations of workers had existed throughout the eighteenth century, but they were mainly small, local, and limited to the skilled trades. In many cases these early worker's societies laid greater emphasis on "friendly" or "mutual benefit" functions than on obtaining employment advantages. Some of the early reactions of workers to the hardships of the new industrial system took the form of riots rather than systematic opposition. The displacement of workers by machines led to sporadic outbursts of machine-breaking, the most famous of which was the Luddite movement of 1811. Burnings and rioting occurred in rural districts during acute periods of distress, and in 1830 there was widespread revolt in the southern counties against the growth of harsher poor law policies. The government and the upper classes strongly repressed any demonstrations of the lower classes. Alarmed by the revolutionary doctrines of the French Revolution and the violence across the Channel the government saw every spark of opposition as kindling the fire of revolution. All efforts of the lower classes to redress their grievances were viewed as conspiracies. The Combination Acts of 1799 and 1800 suppressed trade unions, and the government restrained all forms of organized labor activity, political or industrial. These acts remained in force until 1824, when the fear of revolution subsided and when more liberal leadership prevailed in Parliament.[4]

Computer Technology and Management

The industrial revolution eventually gave birth to another technology -- the computer. The computer is

basically an inanimate device which demands an approach based upon logic and factual presentation of information. It has to be given a complete set of programs as instruction, accurate information, or data to operate effectively.[5] The computer is also a system with two components. The first component is the hardware, which is the physical part of the system. The second component is the software, which is a set of programs to manage and operate the computer.

> A computer must be given an instruction for each step must be specified. The programmer must be as meticulous as one would be in leading a blind man over a difficult path unknown to him. The entire series of instructions needed for a complete procedure is called a "program." Each segment of the instruction specifies a basic operation, identifies the data and its location -its address- in computer storage, and specifies the device or mechanism to be used. The instruction is read into the central control unit, which, in turn, directs the process. Without a program, the computer is merely an inert mass of metal, wire, and plastic. With a program, it comes to life and slavishly follows its instructions. For this reason, the program is as essentials as the computer itself, and is referred to on an equal basis. The program is called "computer software," while the operating units are called "computer hardware."[6]

The computer carries out programmed commands and instructions. It does exactly what the user demands.

> The computer is a willing slave and will perform whatever it is instructed to do.[7]

Computers began to appear in the United States in significant numbers during the late 1950's.[8] Today,

computers have taken over more human activities in the work place. This first occurred in science and engineering, then gradually moved into administration, communications, and process control.[9]

Various organizations such as General Electric Corporation, IBM, Bell Labs, MIT, Harvard, The National Bureau of Standards,[10] and some statewide human service organizations began utilizing computers to help make their tasks easier to perform.

> The increasing impact of computer systems in both business and government makes it likely that most people will sooner or later be forced into some association with computer based information systems.[11]

Computers have a tremendous impact on our society, but like most modern inventions, they are taken for granted. Without the computer, life would be considerably more complex and complicated. It is impossible to be complacent about the long term effects of automation and computers on employment. It implicitly implies a change in job structure.[12]

> After each major technological development it has possibly been truthful to say, "The world will never again be the same."[13]

The small organization deals with daily tasks by utilizing a personal and close relationship between employees. When the organization becomes larger, personal communication and correspondence becomes too large to meet the different job

functions in the organization. Mailing correspondence, large meetings, and telephone conversations are the methods used to achieve the goals and objectives of the organization.

> In earlier days of corporate experience, there was more direct and personal communication, carrying with it a host of human associations which served the positive purpose of communication redundancy, as well as knitting the organization into a human totality.[14]

Communication is the major factor in smoothing the work in any organization. There are two basic types of communication which Woodwell describes as such:

> Simple communications between two people is defined as point-to-point communications. When many people are involved, it becomes multi-point communications.[15]

In present commercial and general communication, computers have become a vital functional tool.

Managers benefit from the way computer technology accelerates methods of communication in the organization. However, the manager should be aware of the important aspects of communication to get the best results.

> Two important aspects of communication are: first, the transmission of information and instruction within the organization, and secondly, the understanding by the recipients of the message being transmitted.[16]

One of the commonly used computer communication software is ADR/eMAIL which utilizes a word processor to

create and format all messages. It has a message management capability that stores, catalogs, retrieves, and delivers messages. ADR/eMAIL has an automated directory that identifies every user in the system. The manager may write a message by using the word processing system and may send that message to another manager, selected employees, or to all employees in the organization. A response to the manager message may be requested within a certain length of time. The message then may be printed using the office printer, thereby completing the request. At the end of the requested time limit, the manager may review the responses of the employees, print them, and file for future reference. Applied Data Research describes the relationship between ADR/eMAIL and word processing as follows:

> ADR/eMAIL contains its own personal word processor. With a few easy-to-learn commands, users may create entirely new messages, cut and paste existing messages into new ones, and format messages to include centering of text, underlining, changed margins, and more.[17]

Computer and Information System

The basic function of management is described by several writers as planning, organizing, staffing, directing, innovating, motivation controlling, representation, coordination, forecasting, and communication.[18] In addition to the basic functions of

management, information is a vital tool to meet the goals and objectives of the organization. One problem confronting many managers is the lack of access to existing information. Mintzberg addresses the problem by stating:

> Traditional information systems were not designed for the manager. They provide internal, historical, precise information of an aggregated and reference nature, whereas he/she seeks in large part external, current, speculative information of a trigger nature. Hence the manager is forced to rely on his own monitoring system, which is necessarily crude. By coming to understand the manager's actual use of information, the analyst may help design and operate a more effective monitoring system.[19]

In addressing the information problem, two types of managers have emerged. One type works alone to analyze and calculate different job functions. The second type works actively in groups and interacts with many employees. The second type of manager forms the majority of managers in social service organizations.

> The work of most managers is active, and interactive ... they go to meetings, and talk to people.[20]

Therefore, computer technology has proven to be an appropriate tool for the managers to collect, maintains, update, and retrieve information in order to accomplish the goals and the objective of the organization.

Computer and Decision Making in Social Service Organization

In utilizing the computer, projects in social service organizations may be more easily managed. Updates and changes may be made in any step of the manager's project, especially during the process of evaluation. It is easier to carry out evaluations any time as requested by the social service manager. In this regard, Mintzberg points out that:

> The analyst may assume responsibility for project monitoring. Senior managers generally supervise a great number of improvement projects, each one at a different stage of development. The analyst may monitor these, keep track of their progress and sequence and schedule the steps of each for development by the manager.[21]

Social service organizations need simple and easy uses of computer models in order to retrieve straight answers without complexity. Computer models should contain complete information to guide the administrator in achieving the goals of the organization.

> The manager needs powerful but simple models to help him make choices. Analysts can undertake formal model building in those areas where the data are available and where the computer model can be made sufficiently flexible to present the manager with a current and accurate simulation.[22]

Social service organizations tend to have limited resources, therefore managers must find the most efficient ways to achieve the objectives of the organization. The manager

should be aware of the most effective means by which decisions may be made and implemented. Managers must clearly understand the limitation and accessibility to existing and potential organizational resources.

> The manager must feel confident that the organization's resources will not be over extended; he/she must consider whether the decision is consistent with other decisions; he must somehow test the feasibility of the proposals. Furthermore, the manager must consider factors of timing when deciding on requests for authorization.[23]

In the organizational context, the manager must realize that time is a limited and valuable commodity. The manager is normally involved in recurrent scheduled meetings, meetings convened for special purpose, and numerous ad hoc discussions. Because of these demands on his schedule the manager must always utilize his time wisely. Also, the manager must provide appropriate and adequate resources to carry out assigned jobs task and to help facilitate the amelioration of organizational problems and concern as they arise. The manager provides directives and rules regarding scheduling and analysis of accomplishments. Once these rules were made explicit, they may be applied throughout the organization, thereby enhancing the productivity of all units and departments.[25]

The manager is usually confronted with several obstacles as he/she seeks to achieve the goals of the organizations. Primary examples include the lack of time,

limited fiscal resources, the lack of information. These and related obstacles may obviously impose limitations on the amount of authority the manager may exercise. Steers stated:

> The manager might initially look for some of the more common potential obstacles, such as a lack of time or conflicting demands on the subordinate's time, inadequate work facilities, restrictive policies or 'right ways of doing it' that inhibit performance, lack of authority, insufficient information about other activities that affect the job, an lack of cooperation from others with whom he must work.[26]

In addressing these concerns, the computer helps to eliminate human error and thereby increase accuracy of the information. In addition, the computer may be utilized to help control the work flow in the organization. Bannon pointed out two components of management that appear to have the strongest influence in this respect:

> a) the desire to reduce human intervention and error, and
> b) the desire to control work flow and operators more closely.[27]

Hence, the manager needs to develop and design a system that will collect and update information for utilization by the social service manager. Mintzberg stated:

> By putting the manager's information in official storage through regular debriefing sessions held by him and through the collection and documentation of some of his information by the analyst a formal data bank of some of the organization's most important information would be created. This data bank would

> form the basis for an improved information disseminating system. It would also have the advantage of staying in place when the manager left the organization. Such an explicit data bank is a necessary condition for the effective re-programming of strategy making.[28]

Organizational policy should be comprised of input from all significant administrative and programmatic units of the organization. Woodwell suggested more involvement from supervisors. Managers will in turn receive incorrect data and information, thereby giving the upper management more time for supervisory tasks. Woodwell stated that this may be achieved by:

> Involving more supervisory and middle level managers in the decision making process; catching bad data early in the cycle, freeing up management time for direct supervisory tasks, and providing better information on which the business can be run.[29]

Background of Problem

One of the problems facing social service organizations is the use of traditional method of communication to formulate policies and make decisions. This traditional method of providing suggestions to subordinates and managers in the form of memorandums, telephone calls and meetings is inefficient, time consuming and costly.

This paper examined the role of computer communication software utilized by managers of a social

service organization in improving policy and decision making processes. Factors affecting the implementation of computer technology at the managerial level were also considered. When the job function of a social service organization was studied, as in the statewide human service organization, it was found that each director had input into the policy development process (See Appendix A).

Statement of Problem

The relationship between information technology use, and manager-employee affective response in social service organizations is of special interest to managers of social service organizations due savings in terms of time, cost and an increase in information accuracy for purposes of decision making. Therefore, there is a great need to understand the utilization of computer technology in a work setting. For example, managers who exhibit certain characteristics (e.g., intolerance of ambiguity, resistance to change, and poor communication) will register low satisfaction levels with information technology if they use the computer on the job.[30]

As previously stated the purpose of this study is to examine the differences and similarities between two groups of managers and the extent to which they utilized computer

technology in their respective organization. Satisfaction with communication software in the sampled organization is also explored.

Specific research questions to which answers were sought are as follows:

1. What kinds of software do social agency administrators use for communication, word processing, scheduling, payroll, data base, budgeting and related applications?
2. What are the principal factors which adversely affect the application of specific computer technology in selected social organizations at the managerial level?
3. To what extent is computer software utilized by managers in the Statewide human service organization as contrasted with its use in the regional utility firm?

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CHAPTER II

REVIEW OF LITERATURE

This chapter provides a review of selected literature pertaining to the utilization of computer technology by the managers of social service organizations. The literature review focuses specifically on the organizational methodology, computer equipment, and software usage. It presents the development of computer technology from a historical perspective.

Historical Development of Computers

The development of the computer did not begin until after World War II. The effect of the computer on society has previous parallels in history. Many of the resulting technological effects occurred in earlier developments during the industrial revolution of the 18th and 19th centuries. Displacement of workers, women entering the labor force, and migratory population shifts all occurred during the industrial revolution. Likewise, changes in

attitude between management and employees were greatly affected during this period. Upon examining developments and problems of the industrial age, parallels emerged which provide enlightenment on consequences of the high technology revolution of the present. The nature of modern society is complex. Thus, there are now attempts to simplify every task in which employees become engage. The utilization of new technology may help provide solutions to numerous problems and difficulties. One of the most revolutionary technological developments in American society has been the computer. The issue now is when and how the new technology will enter society as a significant factor in supervision of modern life.

> Many historians have remarked on the difficulty of tracing the origins of the computer i.e. when it was first used and at what point its did it become a significant social innovation. At the time of writing, two of the inventors of the computer are still living, but in their speeches and in personal conversation with the author they have difficulty remembering exact dates. However in 1975 John Atanasoff won a federal lawsuit in which he claimed to be equal with J. P. Eckert, Jr. and J. Mauchiy in the invention of the computer.[1]

Today, the computer has moved into every sector of society to meet the goal of replacing human intervention with rapid, accurate, and economical handling of large volumes of data and information. Processing volumes of information is complicated task.[2] Laver observes that:

> Change from an agricultural to an industrial society followed the development of power tools and

> the mechanization of manufacturing. More recently, automatic controls were extended to enable several successive stages in the manufacture of a product to be completed without human intervention. This phase, known as automation, is greatly assisted by computers, and it is most readily applied to continuous processes, such as the production of steel, cement, glass, paper and petrochemicals. In the next phase, which is just beginning, computers will control industrial manipulators, sometimes called robots, which will be equipped with a variety of measuring and sensing devices, and with the mechanical equivalents of arms and hands.[3]

The beginning of computer technology may first be traced to the development of the Electronic Discrete Variable Computer (ENIAC). ENIAC itself was the first step in the development of a high speed logic deducing machine.

> The original ENIAC is lost forever. One of the first assignments given to ENIAC,in 1946, was a problem in physics. It produced the answer in about two hours. Early users observed that one hundred mathematicians using mechanical calculators would have had to work for a year to get the same result. Their accuracy,of course,would have been in doubt.[4]

Computer Utilization

Subsequent to the invention of primitive computer technology, commercial use and application soon followed. An example of commercial application of the computer by General Electric Company illustrates this fact. General Electric Company used the Universal Automatic Computer (UNIVAC).

> The General Electric corporation was the first commercial firm to engage in business data

> processing. In 1954, it installed the UNIVAC I in its Louisville, Kentucky facility, using it for business purposes until 1972 ... but after it government, business and education began to purchase computers for a variety of problem-solving tasks.[5]

As a result of the utilization of computers in society several problems have emerged. One such problem includes the lack of familiarity with different software packages and the complexity that has emerged as a result of putting them to use. Managers should be aware of these problems and develop policies to change the situation with minimum negative impact.

> The increasing computerization of society is a key issue in this crisis and could either worsen it or help solve it. Depending on the policy into which it is incorporated, computerization will bring about changes for the better or for the worse .[6]

The computer may have a positive affect on most managerial decisions made in social service agencies. Managers must be aware of the computer's capacity to perform multiple tasks to comply with the goals and objectives of the organization. Therefore, the manager must control and understand the computer data and utilize the computer to meet these goals.

According to George W. Radley, in the book entitled Managing The Computer, a sizable number of computer projects fail to become operational due to stringent output goals whose control and direction during lengthy implementation periods are hopelessly mismanaged.[7]

The manager should be aware of the computer's capacity to

achieve the goals and objectives of the organization, and simultaneously understand the employee's capacity to become a successful project manager.

> A project manager must understand the department, personal computing needs and the various approaches by which they may be accomplished.[8]

According to Abbe Mowshowitz, the manager should have background knowledge of new technology and its development. The human capacity to act and perform is great, so this capacity should interact with technology to achieve optimum results.

> The computer experts were the first to realize and admit that computer systems, the more sophisticated they became, the more they depend on man's ability to think, to make decisions, to act consciously and creatively, to intervene when routines and programs fail.[9]

It must be realized that the computer is a tool which enables the manager to reach organizational goals. The ability of the computer to provide accurate information is its primary asset. The manager may therefore review and evaluate the information, and subsequently utilize it in policy formation processes.

> Information is needed by individuals and administrators for decision-making purposes. But it is impossible to state specially what information a manager will need because managers differ in the ways they view information and in their analytical approaches in using it.[10]

Barrie Sherman in the book, The New Revolution, The

Impact of Computer on Society states that a manager should be cognizant of the fact that his effectiveness as a decision maker will be measured in part by the quantity and quality of information available to him.

> Information is power; this is the current 'wisdom' which influences the thinking of management, unions, the media and academics. If it is the truth then it follows that those who control the content and dissemination of the information also have the power. Thus managers, administrators, and media representatives who decide what information is received by whom are the persons who ultimately determine the attitudes and responses in a society.[11]

Information utilized must be the most current and accurate available to the manager. To achieve this, the manager must use new technology to communicate with other managers and employees in the organization. Oborne in his text describes communication in the following manner:

> Organizations exist on communications. Any text on organizations emphasizes the significance of effective communication systems. This includes both the less structured communications between individuals and the more formal communications between, say, departments. It is this infrastructure which makes the working of an organization possible at all and as communication is, in effect, the transmission of information over a large or small distance, it is directly related to the spatial and physical properties of the building(s) in which work is carried out.[12]

Communication is one of the most important components of managing people. It is the focus of management functions such as planning, organizing, and controlling. This is true because managers rarely work with

"things" but rather with "information about things."[13] The manager who utilizes computers to communicate with other agency employees may become a leader in decision making. Bair stated that:

> The head of one organization using a computer based message system to communicate with higher level management located in another city estimated that he reduced the turn around time in getting decisions on urgent actions to a matter of 2-3 days. He estimated that decisions on the same kind of problems took him 1-2 weeks prior to the availability of the computer based message system.[14]

Every aspect of any manager's job depends on communication. Thus, effective communication is most essential. The agency staff may fear that the computer will decrease their autonomy and increase the coercive power of administrators and supervisors. The more shaky, threatening, or threatened the existing power balance, the greater the threat posed by the computer.[15] Henriques pointed out that:

> Managers may always be accused of maintaining some bias. The same charge may not be leveled at the computer. It displays no favoritism in identifying the legitimate accomplishments of each employee and in impartially reporting results, regardless of sex, age, race or physical impairment. Because of this, automated measurement allows all workers to begin as equals. If an individual's performance is outstanding, the record is clear in that regard. Where a particular employee is having a problem, his or her manager may identify it through the computer's measurements and respond with additional training or other appropriate measures. What's more, the computer remains completely "unbiased" toward the performance of the retrained employee. For well over a century, management has collected data on workers in the continuing effort to achieve

> greater levels of performance. What computer measurement does is facilitate this process by providing management with more -and more accurate- data on the productivity of employees.[16]

In many cases, employees are afraid of the effect of computers. The naive systems analyst assumes that staff resistance comes from ignorance or lack of understanding due to computer illiteracy.[17] Radley stated that:

> Resistance to change may be considered under a few broad headings: fear of the unknown; fear of unemployment; problems of re-training; the inherent threat to the status ; prestige and security of individuals; a possible disruption of personal relationships; change may lead to exposure and criticism of an individual's mode of working.[18]

Choice depends on the alternatives, consequences, and criterion applied to the choice.[19] Therefore, if the most meaningful choice is made, in terms of employee morale, individual job satisfaction may be improved. In this context, job satisfaction is defined as a positive or negative emotional stage associated with one's work.[20]

Proper communication may lead to enhanced job satisfaction. Managers who improve communication between themselves and their employees may influence employees to perform positively, and increase productivity. Bullock describe the relation between communication and satisfaction as follows:

> One way used to affect job satisfaction is improved communications. Research has found that social cues sometimes affect perceptions more than objective conditions. One way managers influence workers is through cues and the information they provide. An

> area characterized by distorted communications between the two parties is the employee selection process. In the past few years, there has been increasing interest in making employment decisions in a more informed and fair way.[21]

Rewards may be classified into two broad categories, intrinsic and extrinsic. Intrinsic rewards are rewards that may be associated directly with the "doing of the job", such as a sense of accomplishment after successful performance, opportunity for advancement, increased responsibility, and work itself. Extrinsic rewards are rewards which are external to the job, or in the context of the job. Such as security, improved working facilities, praise from one's boss, status symbols, and, of course, pay including fringe benefits.[22]

Definition of Terms

The following definitions are used in this study.

Accuracy: This term refers to the preciseness of the data supplied in the reports to the user on the job.

ADR/eMAIL: A computer communication software used to send and receive massages.

Budgeting: Using a computer to estimate income and expenditures for specific periods of time.

Communication: The process of transferring information in the media from one point, person, or device, to another.

Control: A system which selects instruction to be executed, interprets the instructions, and initiates the execution of the instructions.

Data Base: A comprehensive collection of libraries of data.

Ease of use: This term refers to the effort required to learn to use the reports on the job.

Errors: This term refers to the error handling and error messages provided by the system to the user on the job.

Human Factor: An individual's attitudes, feelings, kindnesses, and emotions.

Manual work: This term refers to the amount of manual work that the user must do to use the report data in doing the job.

Payroll: A list of employees and their wages.

Reliability: This term refers to the capability of the computer system in providing the reports to the user on the job as scheduled.

Schedule: A specific listing of job tasks to be performed within a specified time period.

Word Processing: A computer and printer capable of editing, formatting, and printing text.

FOOTNOTES

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[3] Murray Laver Computers And Social Change (New York: Cambridge University Press, 1980), P.40.

[4] Edward J. Lias Future Mind The Microcomputer New Medium, New Mental Environment (Boston: Little Brown and Company, 1982), P.57.

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[22] Richard M. Steers, and Lyman W. Porter Motivation and Work Behavior (New York: McGraw Hill Book Company, 1975).

CHAPTER III

METHODOLOGY

In this chapter, the description of the research design, sample selection, data collection procedures, instrumentation, and method of analysis are discussed. This study used both mailed and self-administered questionnaires.

Research Design

A descriptive research design was employed for this study. According to Kerlinger, the descriptive design is the plan, structure, and strategy of investigation conceived to obtain descriptive answers to research questions.[2]

The research environment consisted of two social organizations. The first was a statewide human service organization where managers did not use ADR/eMAIL communication software and some of them did not even use the computer.[1] Their primary functions were to supervise their subordinates, and coordinate the basic programmatic and

administrative activity of the functions of the organization. Managers communicated with their subordinates by using traditional manual techniques, such as, memoranda, telephones, letters, and various types of meetings.

The second organization selected for this study was a regional utility firm. In this organization, managers used ADR/eMAIL communication software. These managers carry out functions that are similar to those carried out by managers of the statewide human service organization. They supervise their subordinates and coordinate the overall activity of the organization. However, while managers of the statewide human service organization communicates with their subordinates by using manual techniques; managers of the regional utility organization use ADR/eMAIL computer communication software to communicate with their subordinates. In both organizations, mainframe and personal computers are used to assist the organizations in achieving their goals and objectives. Both organizations have rather similar objectives; to increase productivity, proficiency, and work satisfaction levels.

All managers working for the regional utility who participated in this research have direct interface with the computer in their organization. They use ADR/eMAIL communication software. Conversely, managers in the statewide human service organization who participated in

this research were not using ADR/eMAIL communication software at the time data were collected for this study.

Sample Selection

The study consisted of a total of fifty-seven managers from the statewide human service organization and thirty-one managers from the regional utility organization. Thus a total of eighty-eight managers were included in the sample. Their job task involved all of the conventual managerial functions that manager are expected to carry out. The managers surveyed were divided into two groups:

A. A non-user group that never uses ADR/eMAIL communication software.

B. A user group that uses ADR/eMAIL communication software.

A cluster sampling technique was used to carry out this study by dividing the sample into two groups called clusters. Subsequently, the researcher selected each manager within the cluster. This type of cluster sample is often referred to as a single-stage sample since sampling occurs only once in the process.[3] The researcher distributed the questionnaire to fifty-seven managers who were from the non-user group at the statewide human service organization (those who did not use ADR/eMAIL communication

software). Another set of questionnaires were administered to thirty-one managers who were from the user group at the regional utility organization (those who used ADR/eMAIL communication software).

Data Collection Procedure

A questionnaire was distributed by mail to the two respective groups for the purpose of data collection. Only forty-six managers (80.70%) from non-user group returned the questionnaire. There were thirty-one managers (100%) from the user group contacted. All manager in this group responded to the questionnaire.

Instruments

Two questionnaires were used as the data selection method. A letter accompanying the questionnaire explained the purpose of the survey provided instructions as to how the survey were to be completed and advised that all responses would be kept confidential (see Appendix C).

The questionnaires involved collecting information about the managers' age, sex, level of education, job tenure, and the number of employees under their supervision. Managers who used computers were questioned about the type

of software they used. The software applications included: Word processing, data base, communication software and payroll record maintenance.

The questionnaire was pretested using manager representatives of both groups. After adjustments were made, a total of eighty-eight questionnaires were distributed to the managers of the two organizations. A total of seventy-seven questionnaires (87.5%) were collected. One hundred percent came from the regional utility organization and 80.70% came from the statewide human service organization.

The questionnaire was divided into four sections from which data could be analyzed. Part A was entitled "Computer Involvement". This part of the questionnaire addressed the issue of the use of computer technology on the job. Specific questions were asked about the kind of software applications in use at the organization, for example: Communication, word processing, scheduling, payroll, data base, budgeting and various other types. Part B, entitled "Computer Satisfaction Scale" addressed the level of satisfaction with the use of computer technology in the organization. Part B included the factors affecting the application of computer technology. They also included the lack of familiarity with the computer, skills, time, and computer application. Part C was the component of the questionnaire that addressed the satisfaction of the manager

toward ADR/eMAIL. Only the managers who used ADR/eMAIL could answer this part of the questionnaire. Finally, the last section, Part D of the questionnaire pertained to personal data about the participants. Specifically, the age, sex, educational background, and job tenure of each participant.

Instructions were written so as to offer the best possible response patterns. Part A and D of the questionnaire asked the managers to check all that applied in the space provided for each question asked. Part B and C of the questionnaire allowed the respondent to check off any of seven possible categories: (1) Strongly Disagree (2) Disagree (3) Slightly Disagree (4) Neutral (5) Slightly Agree (6) Agree (7) Strongly Agree.

Method of Analysis

The statistical package for the social sciences (SPSSx) was used to analyze the data on the Digital VAX 11/780 Mainframe Computer. A descriptive analysis such as frequencies, percentages, and cross tabulations were the major statistical analysis used in this study.

FOOTNOTES

[1]. Applied Data Research, ADR/eMAIL User Guide Level I (Princeton: Applied Data Research Inc., 1982).

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CHAPTER 1V

DATA ANALYSIS

Computer technology and its software are widely used in various organizations throughout the state and country for a variety of purposes. Also, there are many software packages which may be used in these organizations in order to gain successful results. The purpose of this study was to examine the differences and similarities between two groups of managers and the extent to which they utilized computer technology in their respective organization. A questionnaire was developed to obtain answers to a wide range of research questions. This research is focused on selected managers who utilize ADR/eMAIL communication software, and managers who do not use ADR/eMAIL software.

Personal Data

The questionnaire established, through personal data, the make-up of the responding managers. From this analysis the researcher was able to ascertain the age group

and sex that comprised the majority of the participants.

There were eighty-eight questionnaires distributed to the managers from which a total of seventy-seven questionnaires (87.5%) were returned. While the majority of the non-user group (73.3%) ranged in age between 30 to 49 years of age; a total of 45.2% of the user group were all under 30 years of age. The results show that the majority of ADR/eMAIL communication software users in the organizations were under 30. However, the majority of non-users (40%) of the ADR/eMAIL communication software were 40 to 49 years of age (see Table 4.1).

In this study, more male managers are in the user group than in the non-user group. The female managers who use ADR/eMAIL communication software comprise 35.5% of the participants. The male managers comprise of 64.5%. Hence, the female managers number almost half of their male counterparts (see Table 4.2).

There are 53.3% female managers and 46.7% male managers who participated in this study in non-user group (see Table 4.2). The sex distribution for participants in this study varied by the type of organization. In the regional utility organization, male managers outnumbered female managers almost two to one. However, in the statewide human service organization, female managers outnumbered male managers by almost 7 percent.

TABLE 4.1

PERCENT DISTRIBUTION BY AGES OF RESPONDENTS

	Percent User	Percent Non-user
Under 30	45.2	2.2
30-39	25.8	33.3
40-49	12.9	40.0
50-59	16.1	20.0
60-Over	0.0	4.5
TOTAL	100.0	100.0

TABLE 4.2

PERCENT DISTRIBUTION BY SEX OF RESPONDENTS

	Percent User	Percent Non-user
Female	35.5	53.3
Male	64.5	46.7
TOTAL	100.0	100.0

Because females are usually employed in larger proportions in human services than in public utilities, opportunities for management positions would probably be much greater.

The educational background of the managers who responded to this study was higher at the master's degree level in both groups. There were 77.4% of the user group who have a master's degree versus 55.6% of the non-user group who have a master's degree. There were 33.3% of the non-user group who have a bachelor's degree, and 4.4% who have a doctorate degree (see Table 4.3).

The length of time that managers were in management positions ranged from 1 to 6 years (83.9%) in the user group. More than half of the users (58.1%) had been in management positions only 1 to 3 years. One-sixth of the respondents (16.1%) had been in management 9 years and more. More than half (51.1%) of the managers in the non-user group had 1 to 6 years tenure in their position also. There are 26.7% of the non-users who had 1 to 3 years tenure in their position, while 33.3% had 9 years and more. More than half of the users (58%) versus one-fourth of non-users (26.7%) had between one and three years worth of experience as managers (see Table 4.4). The regional utility organization had more respondents in management positions for only 1 to 3 years (58.1%) versus the statewide human service organization who had more respondents in management positions for 9 years or more (33.3%).

TABLE 4.3

PERCENT DISTRIBUTION BY EDUCATIONAL ATTAINMENT OF RESPONDENTS

	Percent User	Percent Non-user
Less-college	12.9	6.7
Bachelor	9.7	33.3
Master	77.4	55.6
Doctorate	0.0	4.4
TOTAL	100.0	100.0

TABLE 4.4

PERCENT DISTRIBUTION BY EMPLOYMENT TENURE OF RESPONDENTS

	Percent User	Percent Non-user
Under 1 Year	0.0	6.7
1-3	58.1	26.7
3-6	25.8	24.4
6-9	0.0	8.9
9 Years-up	16.1	33.3
TOTAL	100.0	100.0

The last information received was the number of employees whom the managers supervised. As seen in Table 4.5, the majority of the non-user group (44.5%) supervised between eight to forty-one employees. While the majority of the user group (69.2%) supervised between one to three employees. Twice as many of the users supervised between 42 and 72 persons as compared to the non-user group.

An additional component of analysis addresses the various applications of the computer. The highest percentage of both groups indicated that the computer was used to send and receive messages from one employee to another. There were 55.6% from the non-user group and 71% from the user group who believed that computers could be used as a communication tool to send and receive messages. The percentages of the user and non-user groups were almost equal when polled on the use of the computer in handling payroll (see Table 4.6).

From the data, it was determined that although the percentages from both the non-user and user group were approximately the same in regards to the usage of the computer for "payroll handling" and in "sending and receiving messages", the patterns shifted almost 2-to-1 when it came to "computer usage" in job matching and "other usages" (see Table 4.6).

TABLE 4.5

PERCENT DISTRIBUTION OF THE NUMBER OF EMPLOYEES SUPERVISED BY RESPONDENTS

	Percent User	Percent Non-user
0-3	69.2	26.7
4-7	19.2	20.0
8-41	0.0	44.5
42-72	11.5	4.4
72-Over	0.0	4.4
TOTAL	100.0	100.0

TABLE 4.6

PERCENT OF THE USAGES OF COMPUTER TECHNOLOGY

	Percent User	Percent Non-user
Using ADR/eMAIL	100.0	0.0
To send & receive message	71.0	55.6
Other usages	25.8	55.6
In job handling	12.9	25.0
To handle payroll	3.2	2.8

NOTE: The percentages do not total 100 because each manager was permitted to respond to more than one item.

There were more than twice as many (55.6%) from the non-user group as compared to 25.8% from the user group who felt that computers could be used for several other purposes in an organization. Both groups believed that the computer could be used in planning activity, providing information for clients, budget analysis, staff allocation, training staff, tracking and projecting statistical data, and replacing manually prepared on-going reports with electronic ones (see Table 4.6).

Application of Computer Technology

The participants of the survey were asked what kinds of software they would like to use in their departments. The managers were given a choice from areas that included communication, word processing, scheduling, payroll, data base, budgeting, no software, and other software. Nine out of every ten users of ADR/eMAIL communication software responded that they would like to use data base software (90.3%). The second choice was software for word processing (74.2%). The non-users ranked data base and word processing equally as software of the first choice (57.9%). Communication software ranked second (47.4%) as the software preferred. However, where 51.6% of the users preferred to try other software, only one in five (21.1%) of the

non-users of computer software chose to do the same. Not one (0%) of the managers surveyed from the user group responded by choosing to use no software; but 7.9% of the non-users responded by preferring to use no software (see Table 4.7).

The participants in the computer utilization questionnaire were also surveyed on the actual operations that incorporated computer-related activities within their departments. There were several areas where the managers of both groups used computer technology, they are: scheduling, communication, data base, payroll, word processing, budgeting, and other software.

One fourth (25%) of the managers in the non-user group, and more than half (67.7%) of the managers in the user group have used computer software for scheduling. However, more than a third (34.2%) would like to use scheduling software on their jobs, compared to the 9.7% of users who would like to use scheduling software (See Table 4.7).

Software was used to communicate between the managers and their subordinates in both groups. The researcher found that 43.2% of the managers in the non-user group were using communication software, and 47.4% expressed a preference for its use. All members of the user group were using ADR/eMAIL communication software (see Table 4.7).

The study found that 48.4% of the user group and

81.8% of the non-user group were using data base software in their jobs. Also, the researcher found that employees in both groups preferred to use data base in their organizations -- 57.9% of the non-user group, and 90.3% of the user group (see Table 4.7).

There were 48.4% of the managers from the user group who used computer software for payroll versus 22.7% from the non-user group who used payroll software in their jobs. There were fewer managers of the non-user group (5.3%) who would prefer to use payroll software on their jobs. Not one (0%) from the user group preferred to use payroll software on their job (see Table 4.7).

One of the most extensive use of computers by both organizations was word processing. The data revealed that almost three-fourths (74.2%) of the managers in the user group used word processing software as compared to four-fifths (79.5%) from the non-user group. ADR/eMAIL users use word processing to write, correct, format and save text. The user must know the word processing in order to use ADR/eMAIL communication software. There were 57.9% of the managers in the non-user group, and 74.2% of the managers from the user group who liked using word processing in their jobs (see Table 4.7).

TABLE 4.7

PERCENT OF RESPONDENTS WHO USE COMPUTER TECHNOLOGY

	Percent User	Percent Non-user
Using computer paper report	100.0	95.6
Using computer terminal	100.0	88.6
Using data base software	48.4	81.8
Using word processing	74.2	79.5
Using budgeting	25.8	54.5
Using communication	100.0	43.2
Using schedule software	67.7	25.0
Using payroll	48.4	22.7
Using other software	74.2	20.5
Using no software	0.0	2.3
Like to use data base	90.3	57.9
Like to use word processing	74.2	57.9
Like to use communication	51.6	47.4
Like to use schedule	9.7	34.2
Like to use budgeting	16.1	34.2
Like to use other software	51.6	21.1
Like to use no software	0.0	7.9
Like to use payroll	0.0	5.3

NOTE: The percentages do not total 100 because each manager was permitted to respond to more than one item.

The researcher found that 25.8% of the user group used budgeting software on their jobs. More than twice as many managers from the non-user group (54.5%) used computers for budgeting tasks in their jobs. There were only 34.2% from the non-user group and 16.1% from the user group who preferred to use budgeting software in their work. (see Table 4.7).

Almost three-fourths (74.2%) of the managers from the user group used different software other than that used for scheduling, communication, data base, payroll, word processing, and budgeting. Among the non-user group, only one in five (20.5%) used other software (see Table 4.7).

The results from the computer utilization questionnaire indicate that the managers of both groups use spreadsheet, basic programs, graphic software, terminal emulation programs, utilities programs, forecasting programs, report writing programs, statistical software and integrated software.

Factors Affecting the Application of Computer Technology

This study addresses the principal factors that adversely affect the application of specific computer technology within the organizations. There were 87.1% from the user group, and 90.9% from the non-user group who

believed that there were limitations in using computer software in their jobs (see Table 4.8). Many of the reasons given were lack of familiarity, limited financial resources, lack of skills, limited time, limited application, too complicated to understand, ignored human factor, and other limitations.

There were 74.2% from the user group and 79.5% of the non-user group of managers who agreed that lack of familiarity with different kinds of computer software was the major limitation for using computer technology in their organization (see Table 4.8).

There were 67.7% of the managers from the user group, and 61.4% from the non-user group of managers who believed that limited financial resources were the major factor which prevented the use of computer technology in their respective departments (see Table 4.8).

There was little difference between the managers in the user group (54.8%), and the managers in the non-user group (54.5%) who believed that lack of skills in using high technology prevented the use of computers in their departments (see Table 4.8).

There were 67.7% of the managers from the user group, and 65.9% from the non-user group who believed that limited time contributed to their inability to learn and use computers in their jobs (see Table 4.8).

There were 25.8% of the managers in the user group, and 11.5% from the non-user group who believed that there were very limited applications for computer software. (see Table 4.8).

Many managers believed that computer technology ignores human participation and involvement in problem solving. This in turn would also lead to limitations in using computer technology in their organization. The researcher found that 45.2% of the user group, and 36% of the non-user group were of the opinion that computers ignore the human factor as relates to user satisfaction (see Table 4.8).

Because computer technology requires ample skills and training, many managers decided against the use of computer technology in their jobs. There were 32.3% of the user group and 40% of the non-user group who of the opinion that computers were too complicated to be understood by managers (see Table 4.9). There were 45.2% of the managers from the user group and 36% from the non-user group, who believed there were other limitations which affected the use of computers by the managers on their jobs (see Table 4.8). Selected limitations mentioned by both groups were difficulty in justifying the investment of time as to being productive with computers, lack of exposure to different technology available in performing various tasks, and lack of training.

TABLE 4.8

PERCENT OF FACTORS CONTRIBUTING TO LIMITED USE OF COMPUTERS

	Percent User	Percent Non-user
Factors limitation in using computer	87.1	90.9
Lack of familiarity	74.2	79.5
Limited time	67.7	65.9
Limited financial resources	67.7	61.4
Lack of skills	54.8	54.5
Too complicated to understand	32.3	40.0
Ignore human factor	45.2	36.0
Other limitations	45.2	36.0
Limited application	25.8	11.0

NOTE: The percentages do not total 100 because each manager was permitted to respond to more than one item.

The role of documentation is important in helping to eliminate the difficulties in using computers. Therefore, lack of good user manuals for computer technology is one of the factors which affected the use of this technology by the managers. Also, lack of knowledge about different computer software prevented managers from remaining currently abreast of developments in computer software. This lack of knowledge posed problems with large volumes of information, and maintaining of accurate data collection due largely to the lack of appropriate equipment and software in an organization. Table 4.8 shows that with the exception of "limited application" the percent of responses from managers in both groups were approximately the same. Eleven percent of the managers from the non-user group, and 25.8% from the user group believe that limited application prevented the use of computers in their job.

Response of Managers to Computer Involvement

There exists similarities between the user and non-user groups regarding what effect computers have in terms of employee's replacement. There was little difference between the users (59.1%) and non-users (58.1%) regarding their response to a computer causing one to lose his/her job.

TABLE 4.9

PERCENT DISTRIBUTION OF RESPONSES TO THE ADVERSE AFFECT OF COMPUTER TECHNOLOGY (JOB LOSS)

	Percent User	Percent Non-user
Strongly Disagree	58.1	59.1
Disagree	41.9	20.5
Slightly Disagree	0.0	4.5
Neutral	0.0	6.8
Slightly Agree	0.0	4.5
Agree	0.0	2.3
Strongly Agree	0.0	2.3
TOTAL	100.0	100.0

TABLE 4.10

PERCENT DISTRIBUTION OF RESPONSES TO MANAGERS EMPLOYING PERSONS SKILLED IN COMPUTER USAGE

	Percent User	Percent Non-user
Strongly Disagree	0.0	8.9
Disagree	12.9	22.2
Slightly Disagree	0.0	4.4
Neutral	16.1	13.3
Slightly Agree	0.0	24.4
Agree	58.1	20.0
Strongly Agree	12.9	6.8
TOTAL	100.0	100.0

However, a small percentage (9.1%) of non-users agreed that the computer could cause a person to lose their job (see Table 4.9). Additionally, there was agreement between both groups (51.2% for non-user, 71% for user) that the introduction of computers in the work place requires that managers employ persons skilled in computer usage (see Table 4.10).

Part B of the questionnaire focused the extent to which managers were satisfied with their computer system. Both groups responded positively to the question of communication improvement through computer use. Approximately three-fourths (74.2%) of the user group and one-half (57.8%) of the non-users stated that communication was improved through the use of the computer. However, 31.1% of the non-users and 22.6% of the users expressed no feelings regarding the ability of the computer to enhance communication (see Table 4.11). When surveyed regarding managers' increased familiarity with subordinates' job performance by using the computer, 29% of the users, and 31% of non-users did not agree that use of the computer helped managers increase familiarity with job performance. However, 40% of the non-user group stated that computer usage can help managers become more familiar with subordinates' job performance. A substantially high percentage of users (71%), and a moderately or low

TABLE 4.11

PERCENT DISTRIBUTION OF RESPONSES TO COMMUNICATION IMPROVEMENT BY COMPUTER UTILIZATION

	Percent User	Percent Non-user
Strongly Disagree	3.2	0.0
Disagree	0.0	6.7
Slightly Disagree	0.0	4.4
Neutral	22.6	31.1
Slightly Agree	12.9	13.3
Agree	45.2	24.4
Strongly Agree	16.1	20.1
TOTAL	100.0	100.0

TABLE 4.12

PERCENT DISTRIBUTION OF RESPONSES TO MANAGERS' INCREASING FAMILIARITY WITH SUBORDINATES' JOB PERFORMANCE BY COMPUTER UTILIZATION

	Percent User	Percent Non-user
Strongly Disagree	16.1	2.2
Disagree	12.9	13.3
Slightly Disagree	0.0	15.6
Neutral	71.0	28.9
Slightly Agree	0.0	6.7
Agree	0.0	17.8
Strongly Agree	0.0	15.5
TOTAL	100.0	100.0

percentage of non-users (28.9%) chose to respond neutrally to the same statement (see Table 4.12).

There were almost half (48.4%) of the users, and one-fifth (15.6%) of the non-users who disagreed that managers maintain a more accurate and immediate measurement of the level of productivity of their subordinates through the use of computer technology. There were 35.5% of the users, and 64.4% of the non-users who agreed with the statement. A moderately low percent (16.1%) of the users and 20% of the non-users responded to the statement neutrally (see Table 4.13).

The last set of questions in part B of the questionnaire focused on the reaction of the managers towards their own specific systems. More than half (54.8%) of the users disagreed that their computer system is frequently down, while 37.9% of the non-users responded in kind. Almost one-fourth (25.2%) of the users and non-users (24.4%) did not register a response to that question. However, 37.7% of the non-users agreed that their system was frequently down, as compared to a lesser percentage (20%) of the user group. Approximately equal percentages of the non-users agreed that their system was frequently down (see Table 4.14). The majority of the users disagreed (67.8%) that their computer system required extensive typing. While more than half of the non-users (56.7%) agreed that their computer system required extensive typing (see Table 4.15).

TABLE 4.13

PERCENT DISTRIBUTION OF RESPONSES TO MANAGERS' MAINTAINING ACCURATE AND IMMEDIATE MEASUREMENT OF PRODUCTIVITY BY COMPUTER UTILIZATION

	Percent User	Percent Non-user
Strongly Disagree	0.0	0.0
Disagree	32.3	8.9
Slightly Disagree	16.1	6.7
Neutral	16.1	20.0
Slightly Agree	35.5	24.4
Agree	0.0	22.2
Strongly Agree	0.0	17.8
TOTAL	100.0	100.0

TABLE 4.14

PERCENT DISTRIBUTION OF RESPONSES TO FREQUENT BREAKDOWN OF COMPUTER SYSTEM

	Percent User	Percent Non-user
Strongly Disagree	16.1	6.7
Disagree	22.6	15.6
Slightly Disagree	16.1	15.6
Neutral	25.2	24.4
Slightly Agree	20.0	24.4
Agree	0.0	6.7
Strongly Agree	0.0	6.6
TOTAL	100.0	100.0

TABLE 4.15

PERCENT DISTRIBUTION OF RESPONSES TO COMPUTER SYSTEM ACTIVITIES REQUIRING EXTENSIVE TYPING

	Percent User	Percent Non-user
Strongly Disagree	16.1	7.9
Disagree	29.0	15.5
Slightly Disagree	22.7	7.9
Neutral	3.2	22.0
Slightly Agree	29.0	27.9
Agree	0.0	18.9
Strongly Agree	0.0	9.9
TOTAL	100.0	100.0

Managers' Response Toward Computer Utilization in the Organization

The computer takes time to process and retrieve information. When the computer system is loaded with information, it tends to slows down as it takes time to search for, evaluate, and calculate information. When asked if their computer system responds quickly to department requests, almost half of the users (45.2%) disagreed with the statement. However, 28.8% of the non-users agreed that their system responds quickly to the departments' requests (see Table 4.16). The response to whether the slowing of their system caused job task delays, more than half of the users (54.9%) disagreed that slow responses of their computer system caused their department delays in carrying out job tasks. However, the non-users responded with more than one-third (36.3%) disagreeing and 38.7% agreeing with the statement that the computer system's slow response causes delay in carrying out job task (see Table 4.17). There was substantial agreement between both groups to the question of the importance of communication software. There were 74.2% of the users and 61.9% of the non-users who agreed that communication software was important in their departments (see Table 4.18). However, the groups disagreed with the idea that communication software enables their subordinates to keep current with developments in the department.

TABLE 4.16

PERCENT DISTRIBUTION OF RESPONSES TO COMPUTER SYSTEM RESPONDING QUICKLY

	Percent User	Percent Non-user
Strongly Disagree	12.9	17.8
Disagree	3.3	11.1
Slightly Disagree	29.0	15.6
Neutral	0.0	26.7
Slightly Agree	25.8	15.6
Agree	29.0	8.9
Strongly Agree	0.0	4.3
TOTAL	100.0	100.0

TABLE 4.17

PERCENT DISTRIBUTION OF RESPONSES TO COMPUTER SYSTEM'S SLOW RESPONSE CAUSIN DELAY IN CARRYING OUT JOB TASKS

	Percent User	Percent Non-user
Strongly Disagree	0.0	13.6
Disagree	16.2	13.6
Slightly Disagree	38.7	9.1
Neutral	29.0	25.0
Slightly Agree	3.2	13.6
Agree	0.0	18.2
Strongly Agree	12.9	6.9
TOTAL	100.0	100.0

TABLE 4.18

PERCENT DISTRIBUTION OF RESPONSES TO COMMUNICATION SOFTWARES' IMPORTANCE

	Percent User	Percent Non-user
Strongly Disagree	0.0	2.4
Disagree	0.0	9.5
Slightly Disagree	16.1	11.9
Neutral	9.7	14.3
Slightly Agree	32.3	23.8
Agree	12.9	23.8
Strongly Agree	29.0	14.3
TOTAL	100.0	100.0

TABLE 4.19

PERCENT DISTRIBUTION OF RESPONSES TO COMMUNICATION SOFTWARE ENABLING SUBORDINATES TO KEEP CURRENTLY ABREAST OF DEVELOPMENTS

	Percent User	Percent Non-user
Strongly Disagree	35.5	6.8
Disagree	0.0	18.2
Slightly Disagree	0.0	20.5
Neutral	16.1	27.3
Slightly Agree	38.7	15.9
Agree	9.7	9.1
Strongly Agree	0.0	2.2
TOTAL	100.0	100.0

TABLE 4.20

PERCENT DISTRIBUTION OF RESPONSES TO COMMUNICATION SOFTWARE NOT BEING APPLICABLE IN DEPARTMENT

	Percent User	Percent Non-user
Strongly Disagree	51.6	35.7
Disagree	3.2	16.7
Slightly Disagree	0.0	7.1
Neutral	19.4	21.4
Slightly Agree	12.9	4.8
Agree	0.0	11.9
Strongly Agree	12.9	2.4
TOTAL	100.0	100.0

The users agreed (48.4%), and the non-users (45.5%) disagreed with the idea (see Table 4.19). Finally, responding to the statement that communication software is not applicable in their departments, more than half of both group respondents (54.8% users and 59.5% non-users) disagreed with the statement (see Table 4.20).

Responses of Managers to ADR/eMAIL

ADR/eMAIL is one type of communication software which was used by the user group managers to send and receive messages. This study showed that the users of this software were satisfied and enjoyed using it. The managers polled responded that ADR/eMAIL was a good system (83.9%), useful in their department (83.9%), easy to learn (83.9%), saved time (58.1%) and controlled mail and messages (74.2%). Also, the study showed that this software was not boring and did not require too much time to learn. However, almost two-fifths of those managers (38.7%) who used ADR/eMAIL felt that it was not challenging enough (see Table 4.21).

Summary

The purpose of this study was to examine the differences and similarities between two groups of managers

TABLE 4.21

PERCENT THE USER GROUP'S SATISFACTION WITH ADR/eMAIL COMMUNICATION SOFTWARE

	1	2	3	4	5	6	7	TOTAL
Accomplishment	12.9	0.0	3.2	71.0	0.0	12.9	0.0	100
Boring	3.2	45.2	12.9	22.6	0.0	16.1	0.0	100
Challenging	0.0	16.1	22.6	22.6	16.1	22.6	0.0	100
Confidence	16.1	12.9	0.0	38.7	32.3	0.0	0.0	100
Confuse	12.9	35.5	38.7	12.9	0.0	0.0	0.0	100
Control mail & mess.	9.7	0.0	0.0	16.1	29.0	45.2	0.0	100
Creative	0.0	16.2	16.1	41.9	12.9	12.9	0.0	100
Easy	0.0	3.3	0.0	12.9	54.8	29.0	0.0	100
Enjoy using eMAIL	16.2	0.0	0.0	16.1	12.9	29.0	25.8	100
Frustration	0.0	41.9	19.4	29.0	3.2	6.5	0.0	100
Good	0.0	16.1	0.0	0.0	45.2	38.7	0.0	100
Hard to learn	0.0	38.7	41.9	16.1	3.3	0.0	0.0	100
Happy	0.0	0.0	3.2	12.9	22.6	61.3	0.0	100
Not good idea	25.8	45.2	12.9	16.1	0.0	0.0	0.0	100
Pleasant	0.0	0.0	0.0	41.9	16.2	41.9	0.0	100
Save time	0.0	0.0	0.0	41.9	25.8	32.3	0.0	100
Simple	0.0	0.0	3.2	12.9	51.6	32.3	0.0	100
Too much time	16.1	12.9	41.9	0.0	25.8	3.3	0.0	100
Useful	0.0	0.0	0.0	16.1	35.5	48.4	0.0	100
Wastes time	16.1	22.6	25.8	25.8	0.0	9.7	0.0	100

TABLE 4.21-Continued

1 ..... Strongly Disagree
2 ..... Disagree
3 ..... Slightly Disagree
4 ..... Neutral
5 ..... Slightly Agree
6 ..... Agree
7 ..... Strongly Agree

NOTE: The percentages do not total 100 because each manager was permitted to respond to more than one item.

and the extent to which they utilized computer technology in their respective organization. Of the two organization surveyed, the researcher found that computer software was used for various purposes, such as sending and receiving messages, word processing, job matching, budgeting, and to handle payroll (see Table 4.6). The length of time that respondents were in management positions ranged from less than a year to more than nine years. Twice as many managers of the regional utility organization (58%) had served in management positions from one to three years. Conversely, on (27%) of the managers in the statewide human service organization had served for the same length of time. Also, it is significant to observe that there were more statewide human service organization managers (33%) with nine or more years of experience than managers of the regional utility organization. Actually managers of the regional utility organization totaled only (16%). The data revealed that the managers from both organizations were relatively young -- they ranged in age from 30 to 49 years and were well educated (see Tables 4.1, 4.3, 4.4). The number of principal factors that adversely affected the application of computer technology at the managerial level in both organization were very limited. However, the managers in both organizations indicated concern about the limited financial resources (67.7% of the regional utility organization and 61.4% of the statewide human service

organization) (see Table 4.8). The managers surveyed indicated that they would like to experiment with a computer software that is different from that which they were currently using. This concern was expressed by (51.6%) of the managers in the regional utility organization and (21.1%) of the managers in the statewide human service organization (see Table 4.7). The managers from the regional utility organization who used the ADR/eMAIL communication software responded positively towards the system. They cited that ADR/eMAIL was useful, easy to learn, and saved considerable time (see Table 4.21). The researcher found only a slight differences in the extent to which computer were utilized among managers of both two organizations. Also, it is significant to note that the overwhelming majority agreed that computer technology was a useful management tool.

FOOTNOTE

[1] ADR/eMAIL Improving Communications Throughout the Organization (Princeton, NJ: Applied Data Research, 1985).

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The interaction between man and machine is constantly evolving. As technology grows more complex, so must man's ability to adapt to this technology. The purpose of this study was to examine the differences and similarities between two groups of managers and the extent to which they utilized computer technology in their respective organization. This chapter presents the conclusions of this study and offers recommendations for managers of social service organizations to make more extensive use of computers technology.

Conclusions

Two groups were examined -- the user group from the regional utility organization, and the non-user group from the statewide human service organization. A questionnaire was utilized to ascertain the extent to which computer technology was utilized in two organizations. Eighty-eight

questionnaires were distributed to managers of both groups. A total of seventy-seven questionnaires were collected (87.5%).

The data revealed that (95.6%) of the managers of the statewide human service organization (non-user group) used a computer paper report and (88.6%) used computer terminals in their jobs (see Table 4.7). This revealed the extent to which the social service organizations used computer technology. Also, the data revealed that many managers of both groups believed that computers may be utilized in their organization to help facilitate various managerial functions such as sending and receiving messages, payroll handling, job matching, planning activity, providing information for clients, budget analysis, staff allocation, training staff, tracking and projecting statistical data, and replacing manually prepared on-going reports with electronic ones (see Table 4.6).

Managers of both group recognized the importance of computer software in their job such as data base and word processing. Managers of the user group responded overwhelmingly noting that they prefer the use of data base software (90.3%) and for word processing (74.2%). The non-user group also preferred data base and word processing (57.9%) (see Table 4.7).

There was disagreement between the two groups as to whether management's use of computer technology would

increase their familiarity with the job performance of their subordinates. Only 35.5% of the respondents in the user group agreed that the use of computer technology could enable managers to have a more accurate and immediate measurement of subordinate's productivity levels. However, 64.4% of the non-user group agreed that subordinate's productivity levels could be accurately measured by the use of computer technology. This differential illustrates the fact that the non-user group for the most part deals with larger numbers of subordinates. Inherent in this larger group is the need for more effective means of communication between the manager and their subordinators (Table 4.6).

A majority of the managers of both groups, as data revealed, believed that there were numerous reasons as to why computer technology was not utilized more extensively in their respective organizations (see Table 4.8). Many of the reasons given were lack of familiarity, limited financial resources, lack of skills, limited time, limited application, too complicated to understand, ignore human factor, lack of training, lack of good user manuals for computer technology and lack of knowledge about different computer software (see Table 4.9).

The data further revealed that both groups agreed that computers have a positive impact on communication channels in social service organizations. This clearly suggest that with improved communication channels in an

organization, the possibility of increased efficiency is greatly enhanced. The manager of the user group had a smaller number of subordinates with whom to communicate and thus the communication process was more easily facilitated. This illustrates the theory that the smaller the group, the more effective the lines of communication. Although the data showed enthusiasm for computer utilization, the user group did not agree that the subordinate's productivity level could be more accurately measured. Also, the managers of the user group may feel that in the element of social service organization they have reached a high degree of efficiency. However, because of their subordinate's size, the user group has a greater potential for more effective application of computer technology than did the non-user group. This is due in part to the fact that the financial costs would be smaller, overall training time would be less, and the ability of constant organizational adjustments would be easier.

The study found that ADR/eMAIL communication software users were satisfied, enjoyed using this software because it was easy to learn, saved time and helped to control mail and messages (see Table 4.21). Perhaps most significantly, this study indicated that while managers of social service organizations must learn to adapt to computer technology, it is equally important to have sufficient and appropriate computer technology available and

accessible to managers to help meet the needs of their particular organizations.

Recommendations

Computer technology had a very strong impact on managers and their subordinators' productivity levels in the social service organization. Utilization of computer technology by the managers lead to an increase in productivity and saving for the organization in terms of cost, time and provides excellent services for clients. The social service organizations must use computers to become and remain competitive with other computerized organizations. Also utilization of computer technology enables an organization not only to achieve a higher level of productivity, but also enables it to increase the level of proficiency within specified work areas.[1]

To help make the managers more aware of computer technology, management should increase their computer literacy. This can be accomplished by scheduling seminars and workshops pertaining to the value and application of computer technology. Computer literacy workshops should be offered perhaps quarterly for managers who have experience in working with computers and utilized them to help perform their job tasks. Courses in new computer software should be

taught and explained as effective managerial tools. For less experienced manager hand-on-training and computer workshops should be offered perhaps biweekly until managers become competent in using computer. For those who did not use computers, weekend courses and hand-on-training should be provided.

The organizations should encourage their managers and subordinators to learn and use computer as effective managerial tools to help achieve the goals of the organization. Therefore, rewards and training certificate should be provided as incentives to those who completed the computer training workshops. Also, the organization encourage its managers to participate in continuing education courses in computer literacy by paying their tuitions and reward them in their job both financially and via special recognition.

Computer communication software is advantageous for the managers to use to help achieve the objectives of their organization. Therefore, managers in social service organizations should utilize computer communication software as a management tool for decision and policy making, and planning and program implementation.

Recommendation for Future Studies

The primary purpose of high technology as used in this context is to help facilitate the achievement of managerial tasks. Therefore, the effect of high technology on the management job task requires in-depth studies and observations. Computers as a technological tool can be used by social service organizations, to help facilitate the performance of greater amounts of work. This in turn, would enable the organization to truly benefit from computer technology.

The following suggested studies may be explored to provide broader insights into the effect of high technology on management job tasks.

1. An in-depth study of the attitudes of social agency managers towards computer technology. This study would illuminate how managers attitudes can encourage or impede the adaptation of high technology into a particular organization.
2. A comparative analysis of managerial techniques use by managers nationally and internationally. Essentially this would illustrate how different cultures and customs effect the application of computer technology on organizations.
3. A comparative study between managers of American social service organizations and overseas social

service organizations. This study would help clarify how current technology affects managerial development in contrast to American social service organizations.

4. A comparative analysis of the philosophy and style of the manager who utilizes computer technology and the one who does not utilized computer technology in social service organization.

FOOTNOTE

[1] Donald R. Woodwell Managing Personal Computer Workstations A Corporate Resource (Homewood: Dow Jones-Irwin, 1984), P.196.

APPENDIX A

ORGANIZATION CHARTS
OF THE STATEWIDE HUMAN SERVICE ORGANIZATION

DIVISION DIRECTOR

The job functions of the division director of the Statewide Human Service Organization (SHSO) are as follows:

1. Supervise and coordinates division's overall activities. Meets with various SHSO division directors and state agency heads to coordinate division policy and programs.
2. Attend numerous meetings with federal agencies and advocacy groups to explain division's policies,program and needs.
3. Respond to legislative and private citizen inquiries.

The deputy division director assists the director and take his place if he is not present (see figure 1). Under the director, there are Public information service specialists. Their responsibilities are :

1. Respond to public inquiries regarding division programs and activities.
2. Develop and disseminates news releases to media on

division programs and activities.

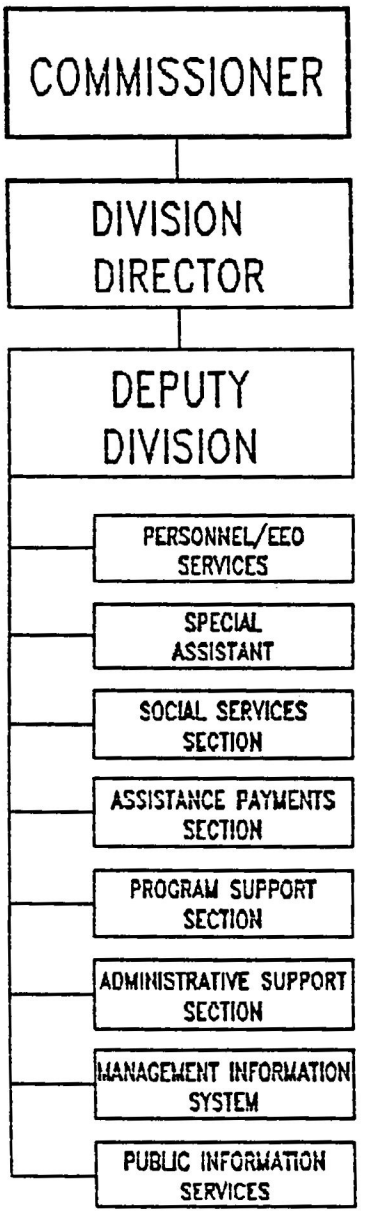
3. Coordinate public information activities with the SHSO public information office.
4. Produce the division's newsletter.

EQUAL EMPLOYMENT OFFICER:

The personnel and Equal Employment Officer (EEO) is responsible for job announcements and training. The department describes his job functions as follows:

1. Prepare and distribute division job announcements.
2. Write and interpret personnel policies and procedures.
3. Provide consultation and technical assistance to employees on personnel issues and grievance procedures.
4. Develop plans for equal employment opportunities.
5. Advise division managers on the implementation of equal employment opportunity plans.
6. Write division's equal opportunity development plan, monitor division's personnel actions and investigate discrimination.
7. Coordinate personnel activities with division budget office, SHSO personnel office and merit system.
8. Coordinate management training and career development.

STATEWIDE HUMAN SERVICE ORGANIZATION
DIVISION STRUCTURE
FIGURE 1



SPECIAL ASSISTANT:

Administration in the social organization needs assistance in planning meeting and reviews and summarizing correspondence. The job functions of the Administrative Assistance include:

1. Plan and coordinate monthly statewide meetings of the division management team.
2. Prepare division's agenda for SHSO board meetings.
3. Take time at meetings.
4. Act as division's legislative liaison during meetings of the general assembly.
5. Prepare responses as correspondence for the division director.
6. Review and summarize correspondence for the division director.

SOCIAL SERVICE SECTION:

Under the division director and his deputy,there are five divisions (see figure 1). The first one is the Social Service Section. The task of this division is described as follows:

1. Manage adoptions,foster care child protective services, adult services,and day care programs.
2. Develop, write and review state plans, policies, rules

and regulations for Social Service Programs.

3. Provide training, consultation and technical assistance to district and county staff.
4. Apply for federal grants and assist agencies in securing funds for the development of programs.
5. Develop and conduct public awareness training campaigns.

ASSISTANCE PAYMENTS SECTION:

Second is the Assistance Payments Section which manages the following :

1. Manages employment services, Aid to Families with Dependent children (AFDC), food stamps, medicaid, and special federal programs.
2. Interprets federal regulations to develop and write state policy, plans, rules and regulations for public assistance programs.
3. Provides technical assistance, consultation and training to district and county staff.
4. Develops state corrective action plans to evaluate, monitor and correct case errors that determine the federal error rate for the state.
5. Reviews fair hearing decisions.
6. Responds to client inquiries and complaints regarding division's programs.

PROGRAM SUPPORT SECTIONS:

Third is the Program Support Sections which is responsible for training and the following tasks:

1. Provides programmatic training to field staff.
2. Evaluates delivery of services and public assistance programs and examines county plans for title VI (civil rights), and section 504 (handicap access) by conducting on-site reviews.
3. Prepares and distributes program policies and procedures.
4. Develops, implements, and contracts training programs for division.
5. Monitors and maintains a library of division manuals and issuances.

ADMINISTRATIVE SUPPORT SECTION:

The administrative support section is the fourth division. They provide assistance to the administration and staff, and the following :

1. Provide consultation and technical assistance to section directors and field staff on fiscal and general administrative matters.
2. Coordinate preparation of division's budget requests and

revisions.

3. Purchase and maintain inventory of division's equipment and office supplies.
4. Develop, approve, and monitor contracts made by the division.
5. Coordinate division's administrative activities with SHSO, department of Administrative Services (DOAS), and other state agencies.
6. Monitor all divisional expenditures and provide appropriate reports to management.
7. Prepare budget report for appropriate federal agencies.
8. Serve as liaison between SHSO and Department of Administrative Services (DOAS) on space leasing for SHSO offices.

MANAGEMENT INFORMATION SYSTEM:

The last section is the Management Information Systems (MIS). MIS supervise and coordinate all computerized functions of the organization including the following :

1. Coordinate and monitor the development, modification and operation of division's computerized systems which include the Public Assistance Information System (PARIS), Georgia Child Welfare Information System (GCWIS), IBIS, and Social Service Information System (SSIS).

2. Distribute output from computer systems to include client notices, Authorization To Participate (ATP) cards, food stamps, and various reports.
3. Track and resolve, computer systems' problems.
4. Develop procedures for use of computer systems and train staff on operation.
5. Respond to various requests for statistical information on divisional programs.
6. Prepare federal and state reports as required.

PUBLIC INFORMATION SERVICES:

In the Statewide Human Service Organization, the director of Public Information Service is responsible for the following:

1. Responds to public inquiries regarding Division programs and activities.
2. Develops news releases, public service announcements, newsletters, annual reports, pamphlets, brochures, and other public education materials.
3. Prepares and makes presentation on Division programs and activities.
4. Coordinates public education/information activities with the SHSO public information office, other states and professional organizations.

5. Provides training, consultation, and technical assistance to state, regional, and county staff.

THE SECTIONS OF DIVISION:

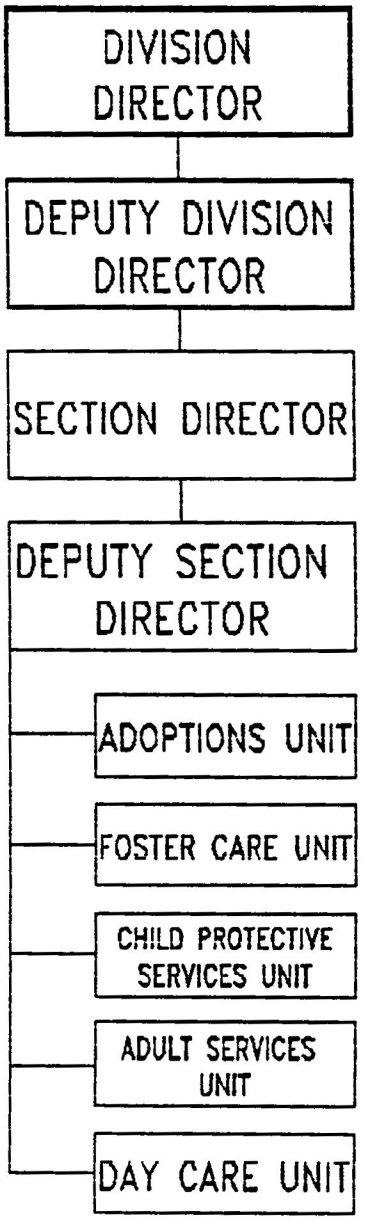
Every section of the Statewide Human Service Organization has specific tasks and objectives. By trying to meet and understand the tasks, policy items flow from the director of the division to the director of every section, then to every unit.

I. Social Services Section (see figure 2).

A. Adoption Unit

1. Administers child adoption services
   a. Adoptions Supplement Program
   b. Independent adoptions
   c. "Wednesday's child"
   d. "My turn now"
2. Manages adoptions related to Interstate Compact Placement of Children (ICPC)
3. Provides training, consultation, and technical assistance to region, county, and court systems on adoption of children.
4. Manages the adoptions exchange and records system.

STATEWIDE HUMAN SERVICE ORGANIZATION
SOCIAL SERVICES SECTION
FIGURE 2



B. Foster Care Unit.

1. Administers child welfare programs
    a. Foster care
    b. Institutional Foster care
    c. Services to expectant parents
2. Manages Foster care ICPC
3. Develops and writes policy care programs
4. Provides training, consultation, and technical assistance to regional and county staff on Foster care programs
5. Develops training programs for Foster parents
6. Promotes the development of Foster parent associations
7. Analyzes and responds to proposed legislations on Foster care services

C. Child Protective Services Unit

1. Develops and writes policy for child protective services programs
2. Provides training,consultation, and technical assistance to regional and county staff on child protective services
3. Develops and conducts public awareness training campaigns on child abuse
4. Analyzes and responds to proposed legislation having impact on child protective services

D. Adult Services Unit

1. Administers adult services programs:
    a. Social Services Block Grant (SSBG)
    b. Adult Protective Services (APS)
    c. Non-Emergency Transportation (NET)
    d. Adult placement services
    e. Homemaker services
2. Provides training, consultation, and technical assistance to county and regional programs
3. Develops all state level adult services, policies and procedures

E. Day Care Unit

1. Manages the direct service delivery network of child development programs funded by the social services block grant contracts
2. Develops, writes, and issues policy for day-care contractors funded by the social services block grant
3. Develops and implements the work plans for various day care related social services programs
4. Provides training, consultation and technical assistance to day care contractors and groups interred in day care.

II. Assistance Payments Section (see figure 3).

A. Client Advocacy Specialist

1. Responds to client inquiries and complaints regarding division's programs

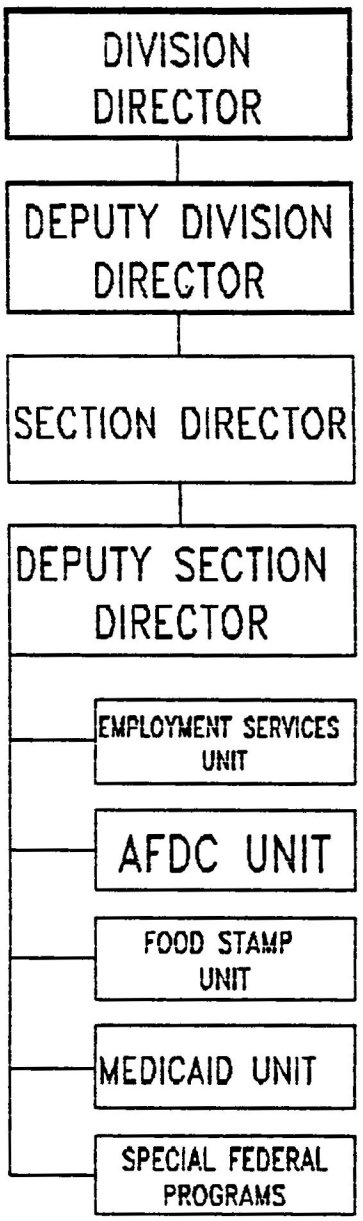
B. Employment Services Unit

1. Administers employment programs:
   a. Work incentive demonstration project (WIN demo)
   b. Community Work Experience Program (CWEP)
2. Develops and reviews policies and procedures related to employment services
3. Provides training, consultation, and technical assistance to state and county staff on employment services

C. Aid to Families with Dependent Children (AFDC) Unit

1. Administers the State's Aid to Families with Dependent Children (AFDC) related programs
2. Provides technical assistance, consultation and training on Aid to Families with Dependent Children (AFDC) and related programs to regional and county SHSO staff
3. Develops, writes and disseminates all AFDC and Aid to Families with Dependent Children (AFDC) related program policies and procedures
4. Prepares reports and responses to Aid to Families with Dependent Children (AFDC) Program inquiries

STATEWIDE HUMAN SERVICE ORGANIZATION
ASSISTANCE PAYMENTS SECTION
FIGURE 3



5. Develops, implements and monitors the state's Aid to Families with Dependent Children (AFDC) corrective action plan

D. Food Stamp Unit

1. Administers the Food Stamp Program statewide
2. Provides technical assistance, consultation and training to regional and county staff
3. Develops, writes and disseminates all food stamp program policies and procedures
4. Develops, implements, and monitors the state's food stamp corrective action plan
5. Prepares reports and responses to Food Stamp Program inquiries

E. Medicaid Unit

1. Administers the mandatory state supplement Program as prescribed by the Department of Medical Assistance (DMA).
2. Provides technical assistance, consultation, and training on the adult medicaid program to regional and county staff
3. Develops client eligibility guidelines for medicaid benefits based on Federal policy interpretation by the State's Department of Medical Assistance (DMA)
4. Serves as liaison between SHSO and regions, and counties' Medicaid staff on issues of program

operation

5. Develops, implements, and monitors the eligibility component of the state Medicaid corrective action plan

F. Special Federal Programs

1. Administers the Energy Assistance Program statewide
2. Administers contracts with public and private agencies for the provision of services to refugees
3. Provides technical assistance consultation and training on the energy assistance program, and refugee services to regional and county staff.
4. Develops, implements, monitors, and evaluates the State's energy assistance plan and maintains the policy and procedures manual
5. Develops state plan, policies, rules and regulations related to refugee services
6. Administers disaster assistance and other Federal programs as appropriate

III. Program Support Section (see figure 4).

A. Quality Control Unit

1. Conducts quality control reviews of selected Aid to Families with Dependent Children (AFDC) and Food Stamp cases by reviewing total case record, interviewing clients at home to verify

information, and reverifying all points of eligibility via other appropriate sources

2. Responds to Federal validation reviews of Quality Control (QC) findings
3. Consults with Aid to Families with Dependent Children (AFDC) and Food Stamp units on identified errors and applicable policy interpretations

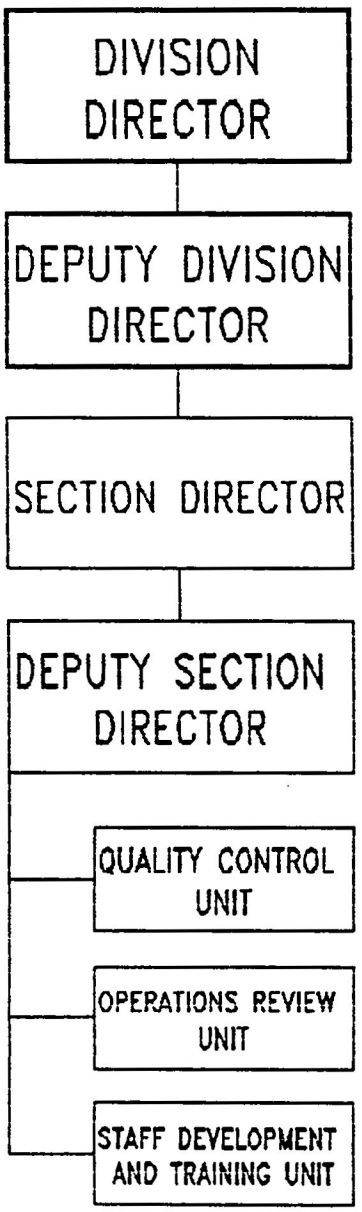
B. Operations Review Unit

1. Determines program policy and procedural compliance by examining social services and Food Stamp case files, and reviews findings with appropriate state, regional, and county staff
2. Determines program policy and procedural compliance by examining energy assistance program case files at the regional and county offices and at community action agency locations, and reviews findings with appropriate state, regional, and county staff
3. Examines county plans for title VI (Civil Rights) and section 504 (handicap access) for completeness

C. Staff Development and Training Unit

1. Consults with other program support staff to develop and implement programmatic training

STATEWIDE HUMAN SERVICE ORGANIZATION
PROGRAM SUPPORT SECTION
FIGURE 4



programs for division with input from program units

2. Negotiates contract for training services, monitors and evaluates training provided through contracts
3. Provides technical assistance and consultation to the division of the development of training modules and presentations
4. Coordinates use of audio-visual equipment for the division

D. General Support

1. Maintains a library of SHSO issuances and manuals
2. Maintains a log of Division's issuances and monitors the distribution of all issuances and materials for SHSO' manuals
3. Processes and monitors print requests for SHSO forms and materials
4. Responds to requests for manual materials
5. Coordinates print requests with Department of Administrative Services (DOAS) and distribution of material with SHSO mail-room
6. Reviews the Federal Register and disseminates information to appropriate units

IV. Administrative Services (DOAS) Support Section (see figure 5).

A. State Budget Unit

1. Performs the following budget services for the State Office, multi-county level staff:

   a. Completes and submits annual budget request

   b. Completes all forms for Annual Operating Budget (AOB)

   c. Prepares expenditure analyses to identify problem areas and surpluses

   d. Prepares supplemental and fiscal affairs requests

   e. Manages Personnel Accounting and Control System

   f. Completes required federal estimates for budget development

   g. Processes purchase orders and maintenance contracts

   h. Provides technical assistance to SHSO staff

B. Local Operations

1. Performs the following budget services for counties:

   a. Compiles State total for grants to counties and submits to SHSO Budget Office

   b. Distributes grants to county budget appropriations

c. Manages Grants Management Accounting System (GMAS)

d. Prepares expenditure analyses to identify problem areas and surpluses

e. Prepares supplemental and fiscal affairs requests

f. Manages Personnel Expense Reporting System (PERS) on county offices

g. Provides technical assistance to SHSO staff

2. Assists county departments in developing and implementing accounting systems

C. Purchase of Services Unit

1. Performs the following budget services for Purchase of Social Services:

a. Completes and submits annual budget request

b. Completes all forms for Annual Operating Budget (AOB)

c. Prepares expenditure analyses to identify problem areas and surpluses

d. Prepares supplemental and fiscal affairs requests

e. Provides accounting services for day care fee collections

f. Processes purchase of services contract reimbursement requests

g. Provides technical assistance to SHSO staff and service providers

D. Operations Support Unit

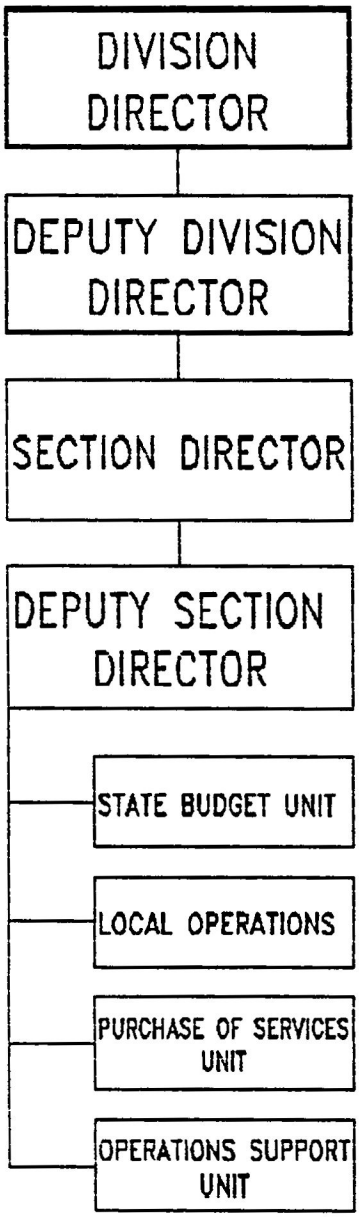
1. Purchases and maintains inventory of Division's equipment and office supplies
2. Receives requests for office space and coordinates requests with SHSO General Support Unit
3. Monitors telephone bills
4. Processes paperwork on equipment rentals and contracts
5. Coordinates unit activities with SHSO, Department of Administrative Services (DOAS), and other administrative units within State agencies
6. Serves as liaison between SHSO and Department of Administrative Services (DOAS) on space leasing for SHSO offices
7. Prepares and tracks telecommunication requests
8. Reviews and drafts policies on records management for the Division

V. Management Information Systems Section (see figure 6).

A. Operational Support

1. Prepares and analyzes expenditures for division's electronic and processing systems

STATEWIDE HUMAN SERVICE ORGANIZATION
ADMINISTRATIVE SUPPORT SECTION
FIGURE 5

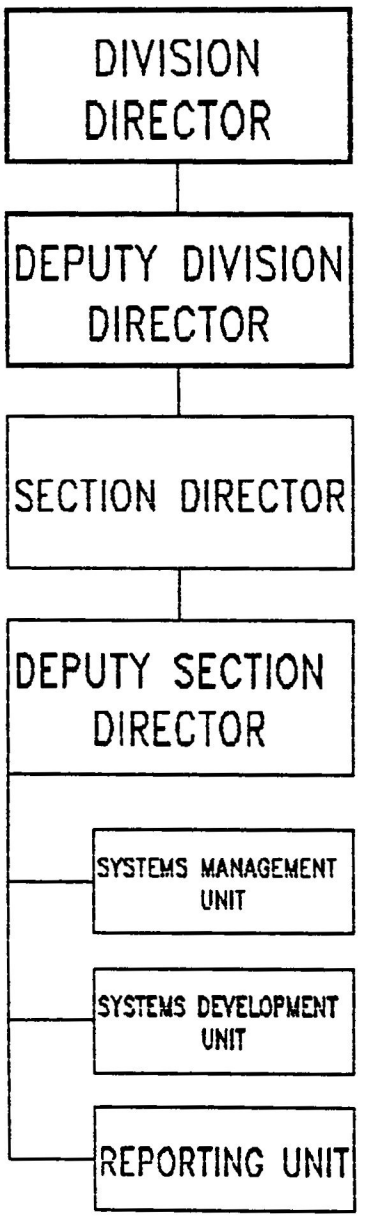


2. Prepares annual budget Request for Division's electronic data Processing systems' operations (RFDP's)
3. Reviews and submits RFDP's for system changes to Department of Administrative Services (DOAS) for cost estimates
4. Prepare final RFDP's for Section Director's approval
5. Prepares and monitors Section's budget
6. Prepares budget amendments shifting funds between electronic data processing systems.
7. Performs one-time special projects

B. Systems Management Unit

1. Prepares and initiates all electronic data processing production schedules and requests for the Division
2. Resolves production problems with Department of Administrative Services (DOAS) and Statewide Human Service Organization (SHSO) staff
3. Maintains ATP card inventory
4. Distributes all systems related mail for the Division

STATEWIDE HUMAN SERVICE ORGANIZATION MANAGEMENT INFORMATION SYSTEMS FIGURE 6



5. Reconciles all transacted ATP cards and maintains file of transacted ATP cards
6. Updates GCWIS and IBIS via computer terminal
7. Provides technical consultation to other SHSO staff regarding production of the Division's electronic data processing systems

C. Systems Development Unit

1. Defines programmatic changes needed in Division's electronic data processing system with SHSO staff
2. Assists in the preparation of system change requests and coordinates these changes with Department of Administrative Services (DOAS).
3. Monitors Department of Administrative Services (DOAS) system development efforts to ensure programmatic requirements are met
4. Receives and assists in resolving computer hardware and system problems from all SHSO offices
5. Develops and presents electronic data processing system user training courses to SHSO staff
6. Plans and coordinates all interdivisional

projects involving the Division's electronic data processing systems

D. Reporting Unit

1. Performs evaluation, analysis and reporting functions, responds to various requests for statistical information and prepares federal and state reports for the Division.

MULTI-COUNTY REGIONAL STRUCTURE:

The Director of the Statewide Human Service Organization supervises and coordinates the activities of the Regional Directors who perform the following:

1. Supervise and coordinate activities of regional staff and county directors.
2. Review, approve, and monitor county budgets, staff allocation, and personnel transactions.
3. Provide consultation to county staff on budget, personnel, and funding issues.
4. Serve as Divisional contact with local officials and community leaders as departmental/divisional issues.

SOCIAL SERVICES COORDINATOR (SSC):

The Regional Directors supervise four different coordinators (see figure 7). One of them is the Social

services coordinators who perform the following:

1. Provide technical assistance, consultation, and training to county staff on:
   A. Prevention services
   B. Child protective services
   C. Foster care services
   D. Adoption Services
   E. Day care
   F. Adult services
   G. Other services programs

FOOD STAMP COORDINATOR (FSC):

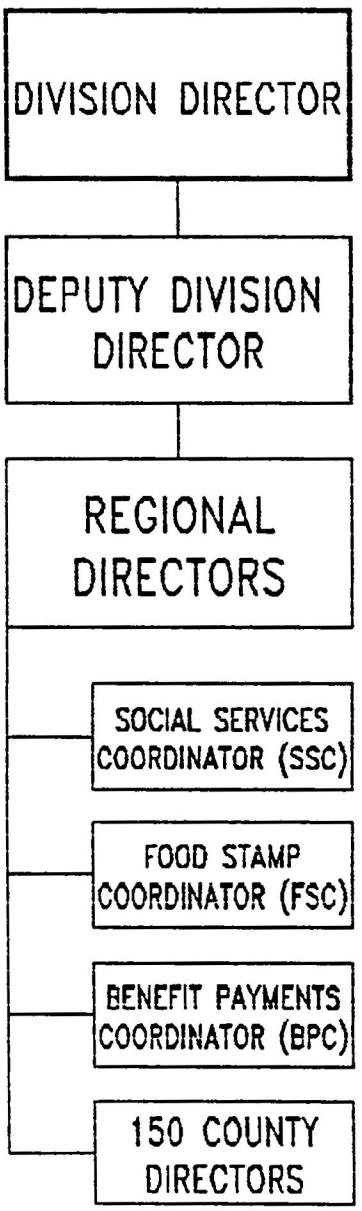
The food stamp coordinator performs the following:

1. Provides technical assistance, consultation, and training to county staff on the food stamp program.
2. Ensures compliance of county staff to stamp policies and procedures.
3. Monitors state's food stamp corrective action plan.

BENEFIT PAYMENTS COORDINATOR (BPC):

The following is conducted by the Coordinator of Benefit Payments:

STATEWIDE HUMAN SERVICE ORGANIZATION
MULTI-COUNTY REGIONAL STRUCTURE
FIGURE 7



1. Provides technical assistance, consultation and training to county staff on the AFDC, medicaid, medically needy, medical assistance only.
2. Ensures compliance of county staff to AFDC and related programs policies.
3. Monitors state's AFDC and related programs corrective action plans.

ORGANIZATION CHARTS OF REGIONAL UTILITY ORGANIZATION

CHAIRMAN OF THE BOARD

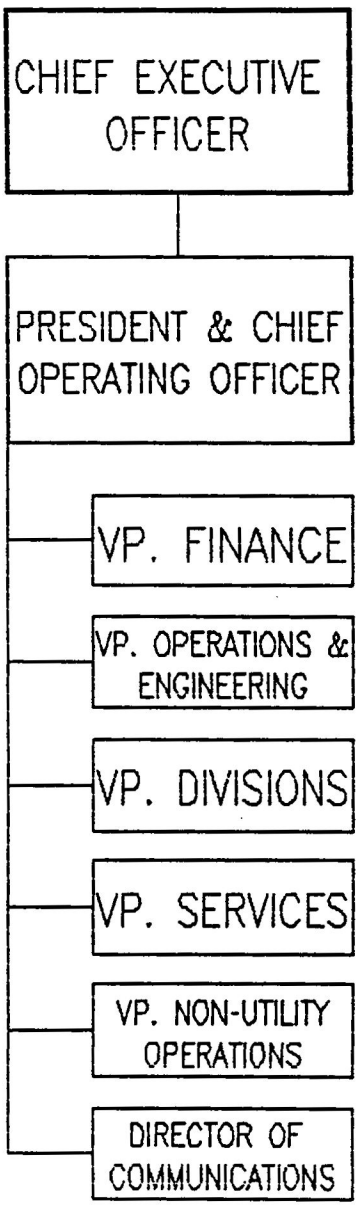
Serves as Chief Executive Officer of the corporation with final responsibility to the Board of Directors and stockholders, and is charged with conducting the affairs of the organization as a profitable enterprise. Also, the Chairman reviews and coordinates all Federal Energy Regulatory Commission and State Public Service Commission matters.

The President serves as Chief Operating Officer of the corporation and is charged with providing immediate supervision over all the affairs and interests of the day-to-day operations of the organization (see Figure 8).

FINANCE AND ACCOUNTING

Senior Vice-President of Finance oversees all financial, accounting, treasury, internal auditing, payroll and forecasting activities, employees' retirement and stock ownership plans. Also liaison with stock holders and with

REGIONAL UTILITY ORGANIZATION
ORGANIZATION STRUCTURE
FIGURE 8



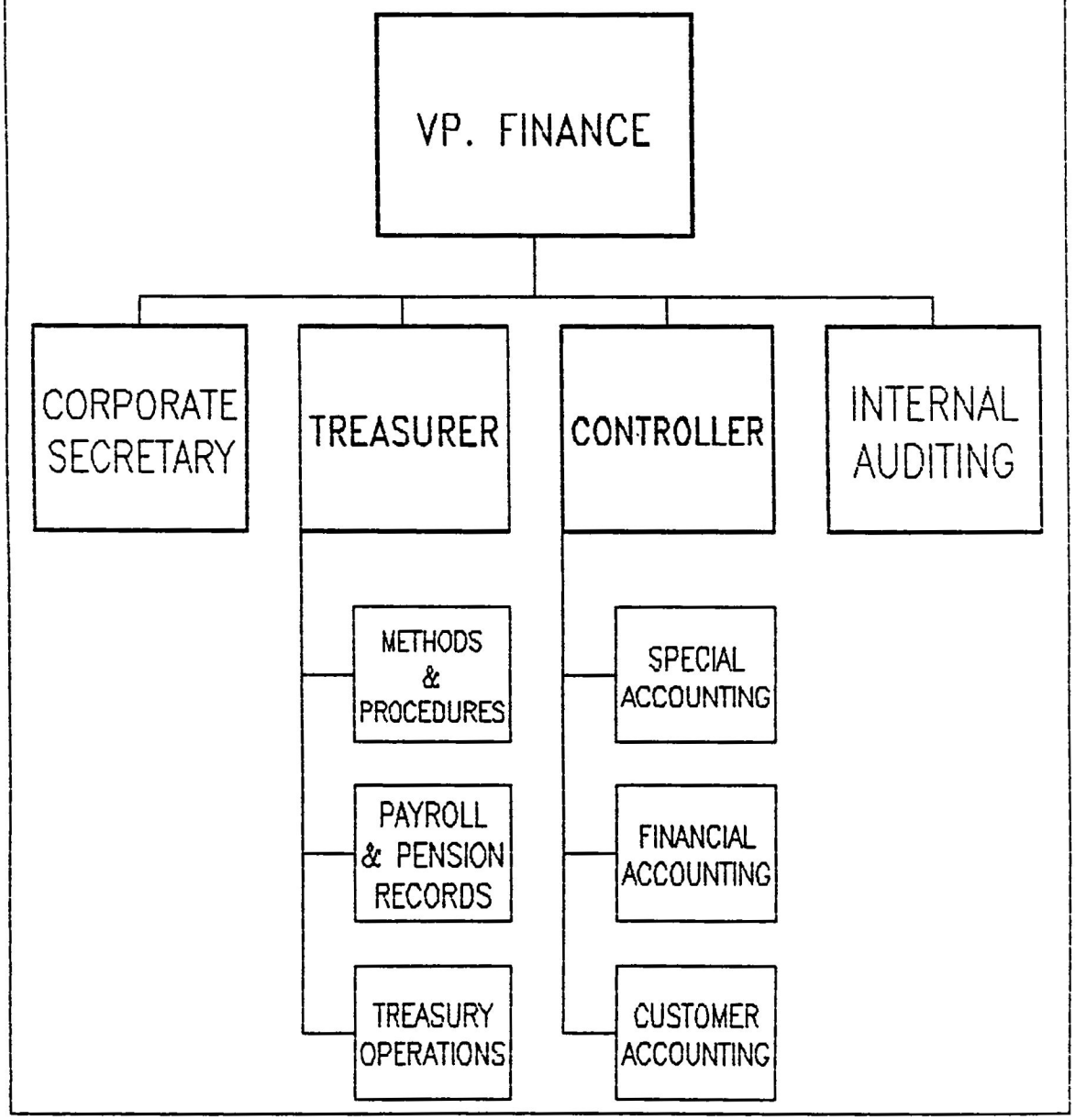
investment community, property and casualty insurance program (see Figure 9).

A. Corporate Secretary prepares notices, records minutes of annual stockholders' meeting, board of directors meeting and related committees. Handles stockholder relations, evaluates corporate risk exposures, oversees property and casualty insurance program.

B. Treasurer is responsible for safeguard and disbursement of organization funds. Supervises payroll records,methods and procedures, and treasury operations.

   1. Manager-Methods and Procedures develops or revises accounting procedures and manual. Supervises forms controls, handles records destruction program.
   2. Manager-Payroll and Pension Records coordinates all supervisor and staff payroll. Administers retirement and employee stock ownership plans. Distributes employee benefit statements and supervises Mutual Savings Credit Union activities. Prepares affirmative action and equal opportunity reports.
   3. Manager-Treasury Operation monitors cash receipts and disbursements, short term borrowing, investing and accounts payable system. In addition, the manager reviews account expenditure classification and supervises customer mail payments and cash remittance system.

REGIONAL UTILITY ORGANIZATION
FINANCE AND ACCOUNTING
FIGURE 9



C. Controller oversees all accounting functions of special financial and customer accounting. Supervises pension records and assists Senior Vice President-Finance in handling investor relations.

1. Manager-Special Accounting prepares material for Public Service Commission reports (rate cases), directors meetings, annual and quarterly reports to the Organization stockholders and Securities and Exchange Commission. Assists in registration statements, computes and pays all taxes. Maintains depreciation records. Handles indenture requirements and acts as liaison with outside auditors.
2. Manager-Financial Accounting prepares monthly financial report, and managers' reports. Maintains general and subsidiary ledgers, plant and construction accounting records, stores accounting records, account receivable records main extension ledger, service line agreements and fuel inventory. Pays interest and dividends on Organization securities, franchise requirements, reconciles bank statements.
3. Manager-Customer Accounting coordinates local office accounts activities. Handles customer refund account, customer records for merchandise purchases, industrial customers' records and governmental assistance.

D. Manager-Internal Auditing directs program that provide an independent appraisal function to supply management with

objective evaluations, appraisals and recommendations concerning the activities reviewed. Coordinates internal data processing and stores auditing procedures.

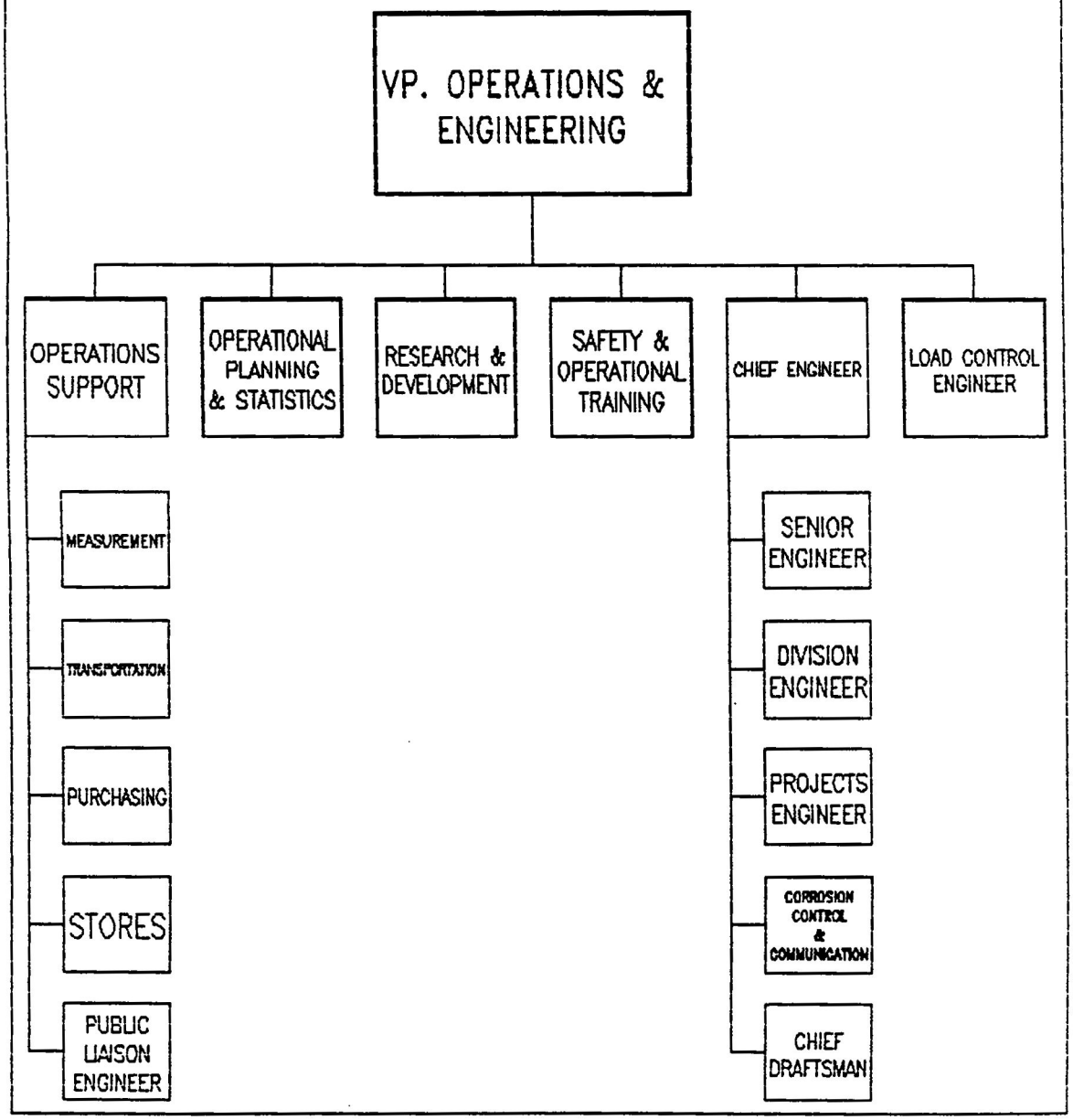
OPERATIONS & ENGINEERING

Senior Vice President of Operations and Engineering directs and coordinates operating supply activities. Establishes and implements procedures affecting operations purchasing,engineering, research and development. Coordinates planning with the state and Federal Department of Transportation (DOT) (see Figure 10)

A. Assistant Vice President-Operations Support responsible for all activities in measurement, transportation, purchasing, stores, public liaison and peak - shaving operations and facilities.

1. Manager-Measurement assures accuracy in measurement of utility purchased and sold. Manages operation of meter and regulator repair function.
2. Manager-Transportation manages Organization fleet vehicles, equipment and garage facility including long range plans, designs, specifications, procurement, maintenance and replacement.
3. Manager-Purchasing manages all activities relating to purchase of materials, equipment, tools, parts and other supplies necessary for Organization operations.

REGIONAL UTILITY ORGANIZATION
OPERATIONS & ENGINEERING
FIGURE 10



4. Manager-Stores manages operation of central warehouse and maintenance of inventory to provide merchandise, stationary material and other supplies to Organization storerooms.
5. Public Liaison Engineer liaison with local fire, code and other governmental officials on utility safety matters. Investigates public accidents and assists in any associated litigation.

B. Director-Operational Planning and Statistics plans for adequate utility supply including peak-shaving additions and new facilities. Projects customer growth, utility usage, utility demand and supply. Develops operating information system and develops the Organization's operating and construction budgets.

C. Director-Research and Development directs research and development activities including files testing and laboratory. Critiques utilization codes and standards for safety, undue discrimination, and unnecessary hardship. Evaluates or tests products purchased or sold to the public. Establishes Organization energy standard consumption of competitive fuels. Recommends conservation standards responsible for quality assurance program for Organization purposes.

D. Director-Safety and Operational Training initiates, coordinates, and administers corporate safety/health functions and activities. Formulates, implements and

coordinates training in areas of operations.

E. Chief Engineer directs all engineering department activities including design of distribution systems and other facilities, right-of-way acquisition and compliance with standards, codes and federal regulations.

1. Senior Engineer develops operating and maintenance procedures, construction standards. Oversees engineering work in several divisions. Coordinates acquisition of railroad crossing permits.
2. Division Engineer responsible for engineering work in several divisions. Oversees design of utility systems, and engineering support to the fleet manager for equipment selection.
3. Projects Engineer responsible for the design of utility plant. Directs computer applications in engineering work.
4. Director-Corrosion Control and Communications responsible for cathodic protection systems. Coordinates organization wide corrosion control program. Coordinates radio communications system.
5. Chief Draftsman supervises drafting activities in the preparation and updating of maps, records and drawings of organization facilities.

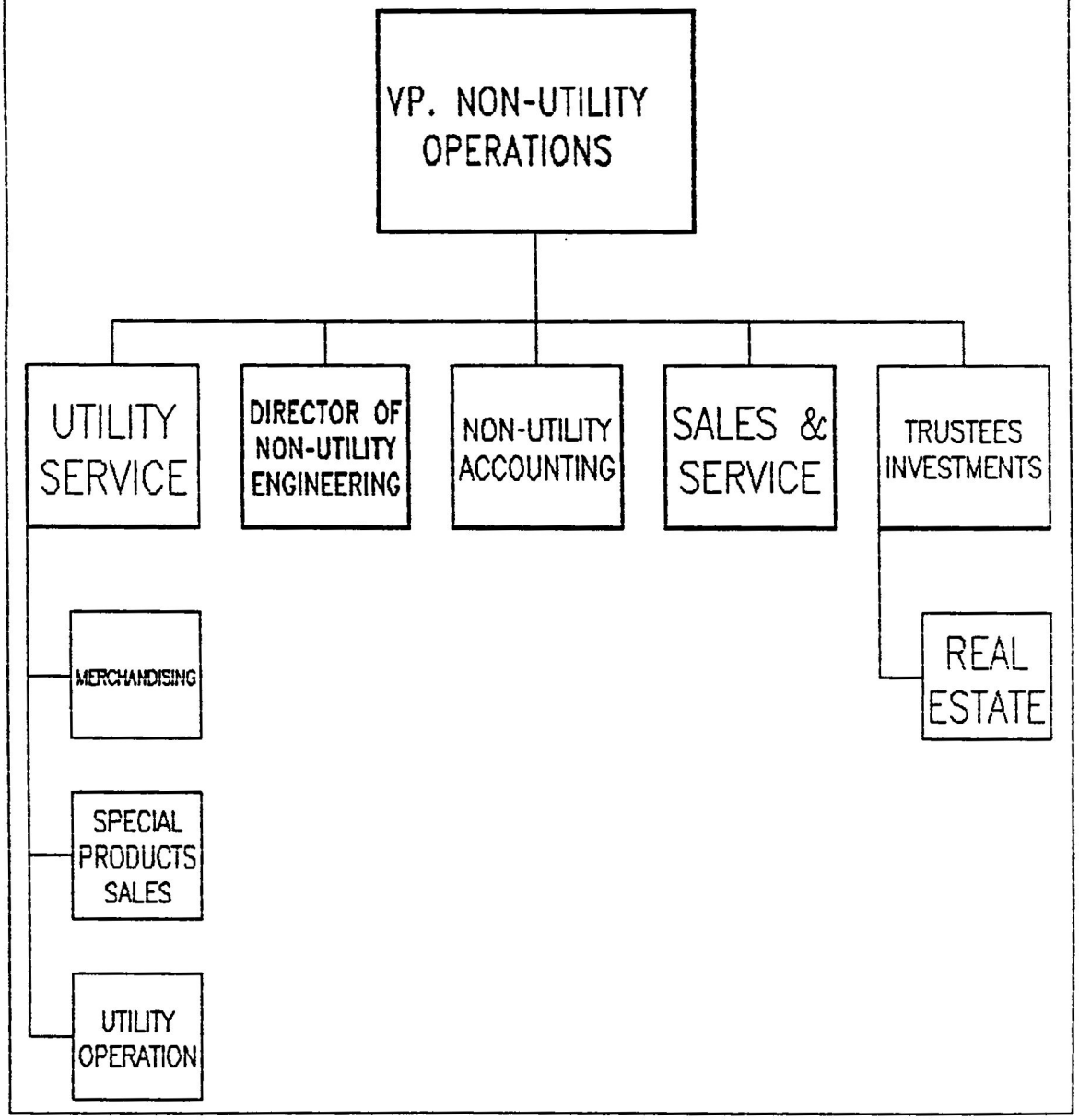
NON-UTILITY OPERATIONS

Senior Vice President directs the non-utility operations to improve return on investment and contribute to earnings, including utility exploration and production, appliance merchandising, and rental property. Also, liquefied petroleum operations, engine sales and service, real estate and other related opportunities (see Figure 11)

A. Utility Service whose principal business is propane operations, merchandising utility appliances and special product sales to include parts and direct mail activities.

   1. Director-Merchandising responsible for developing merchandising programs, pricing, and policies. Furnishes functional guidance for division sales organization on all pertaining matters. Recommends competitive quality of appliance, customer acceptance, and sales volume. Liaison with division sales managers, research and development, and manufacturers.
   2. Supervisor-Special Products Sales responsible for operations of Parts Center and Direct Mail Activities. Includes the coordination of purchasing, inventory control and sale of utility appliance parts, utility grill parts, and related warranty work. Recommends direct mail activities and is responsible for all phases of this operation.

REGIONAL UTILITY ORGANIZATION
NON-UTILITY OPERATIONS
FIGURE 11



3. Supervisor-Utility operation responsible for daily operation of propane schedule and delivery, installation of new systems and collections. Promotes sales of propane and contacts prospects of residential, commercial and industrial propane use. Conducts safety and training programs to insure sales and efficient operation of the utility.

B. Director-Non-Utility Engineering assists the senior vice president in all areas of responsibility. Coordinates Organization marketing activities, liaison with industrial and commercial customers concerning utility related equipment, including existing equipment. Liaison with architects and consulting engineers concerning utility operations in economic analysis and feasibility studies on engines and other equipment applications.

C. Non-Utility Accounting monitors and reviews utility Organization operations. Maintains accounting records and filing income tax returns. Coordinates activities and reviews accounting procedures of Engine Sales and Service Organization. Assists the senior vice president in all non-utility accounting matters.

D. Manager-Engine Sales & Service Organization responsible for overall operation and profitability of Organization. Develops annual sales forecasts and budgets. Controls expenses, recommends new products, trains employees to

sell install and service equipment. And promotes services and parts business

E. Trustees Investments is the vehicle used to participate in real estate ventures which include development of single family lots, commercial office condominiums, town houses and land development for other opportunities.

1. Real Estate; the purchase and development of land for residential , commercial, and / or industrial use to maximize profit potential and maintain relationships with builders and developers.

CORPORATE COMMUNICATIONS

Director-Corporate Communications plans and supervises programs and activities in the areas of print production, public information, employee communications, video production, and media advertising. Reviews Organization communication materials. Provides assistance on communications matters to management at all levels (see Figure 12).

A. Director-Public Information handles press queries, news releases, and publicity. Also news media complaints, public safety information. Updates public information literature.

B. Director-Display and Print Production oversees all print production, supervises Organization display, sign and corporate symbol production and usage. Produces all collateral print material.

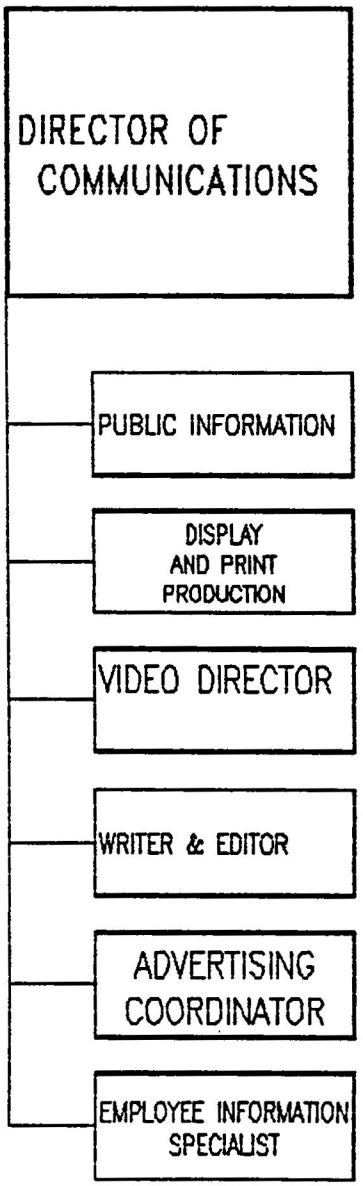
C. Video Director directs overall video activities in Organization. Responsible for production, auditing and programming of training subjects for technical an non-technical material. Provides audio visual and video support for Organization meetings.

D. Chief Writer-Editor handles varied writing and editing assignments, maintains and updates general reference and information files. Coordinates department word processing and electronic communications. Oversees staff in-service training.

E. Advertising Coordinator responsible for media advertising and promotional material. Liaison with advertising agency. Oversees A/VA equipment and activities in office. Responsible for the archives.

F. Editor-Employee Information Specialist produces news, writes employee news releases, employee bulletins. Also responsible for department electronic mail activities.

REGIONAL UTILITY ORGANIZATION
CORPORATE COMMUNICATIONS
FIGURE 12



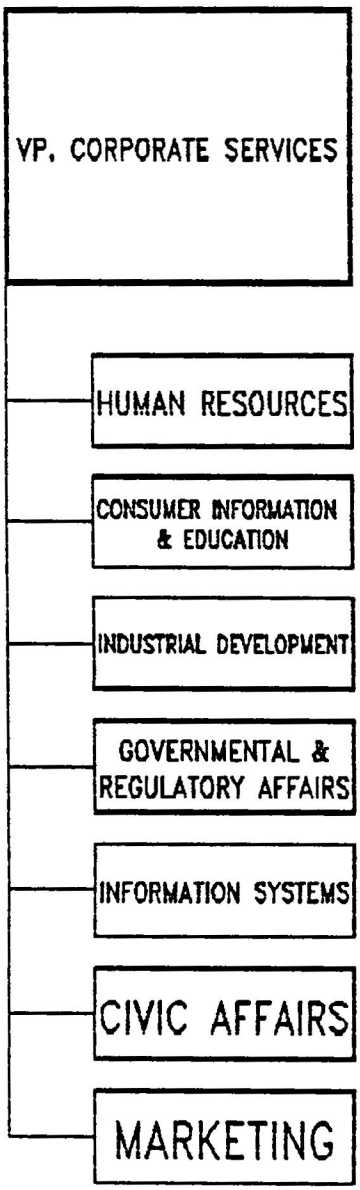
CORPORATE SERVICES

Senior Vice President-Corporate Services oversees all non-operational and non-financial activities that interface Organization wide, including information systems, industrial development, marketing, rates, governmental and regulatory affairs, human resources, consumer services, and civic affairs (see Figure 13)

A. Director-Human Resources oversees personnel activities, educational and training programs, insurance and benefits, and administrative support responsibilities (see Figure 14).

   1. Manager-Employee Services directs affirmative action program, salary and employee benefit surveys, supervises insurance programs, and is responsible for organization performance evaluation program. Also responsible for administration of the Retirement Savings Plus Program.
   2. Manager-Personnel directs personnel department activities, including screening and interviewing prospective employees. Conducts college recruitment program, and coordinates College Co-Op program.
   3. Director-of Education reviews and recommends all non-technical training programs. Aids and consults on technical subjects as appropriate, makes recommendations for attendance to schools,

REGIONAL UTILITY ORGANIZATION
CORPORATE SERVICES
FIGURE 13



conferences, and round-tables. Coordinates all non-technical home study courses and monitors organization training programs. Supervises retirement planning workshops and assists Human Resources Director in succession planning

4. Benefits Coordinator administers tuition reimbursement program. Coordinates relocation assistance program, "United Way at Work" program, and blood drive. Conducts and administers employee benefit and salary surveys, and administers employee sports program.

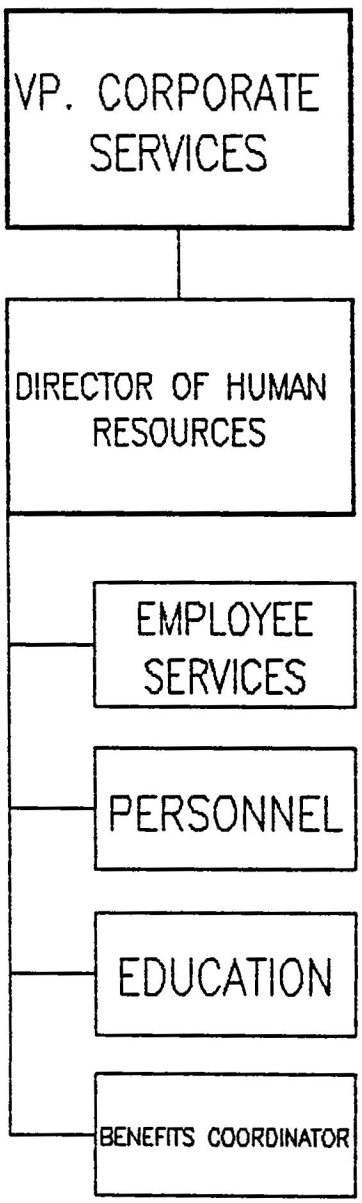
B. Assistant Vice President-Consumer Information and Education plans, develops, implements, and evaluates all consumer oriented programs and activities (see Figure 15).

1. Director-Consumer Affairs provides functional supervision of Consumer Affairs activities organization wide. Chairs customer relations task force. Makes recommendations to management on customer-related matters. Acts as consumer liaison on state and regional level.

a. Manager-Consumer Affairs develops informational materials for customer-contact employees. Maintains liaison with statewide consumer groups.

b. Consumer Affairs Supervisor coordinates division consumer affairs activities. Monitors implementation of Organization policies/procedures

REGIONAL UTILITY ORGANIZATION
HUMAN RESOURCES
FIGURE 14

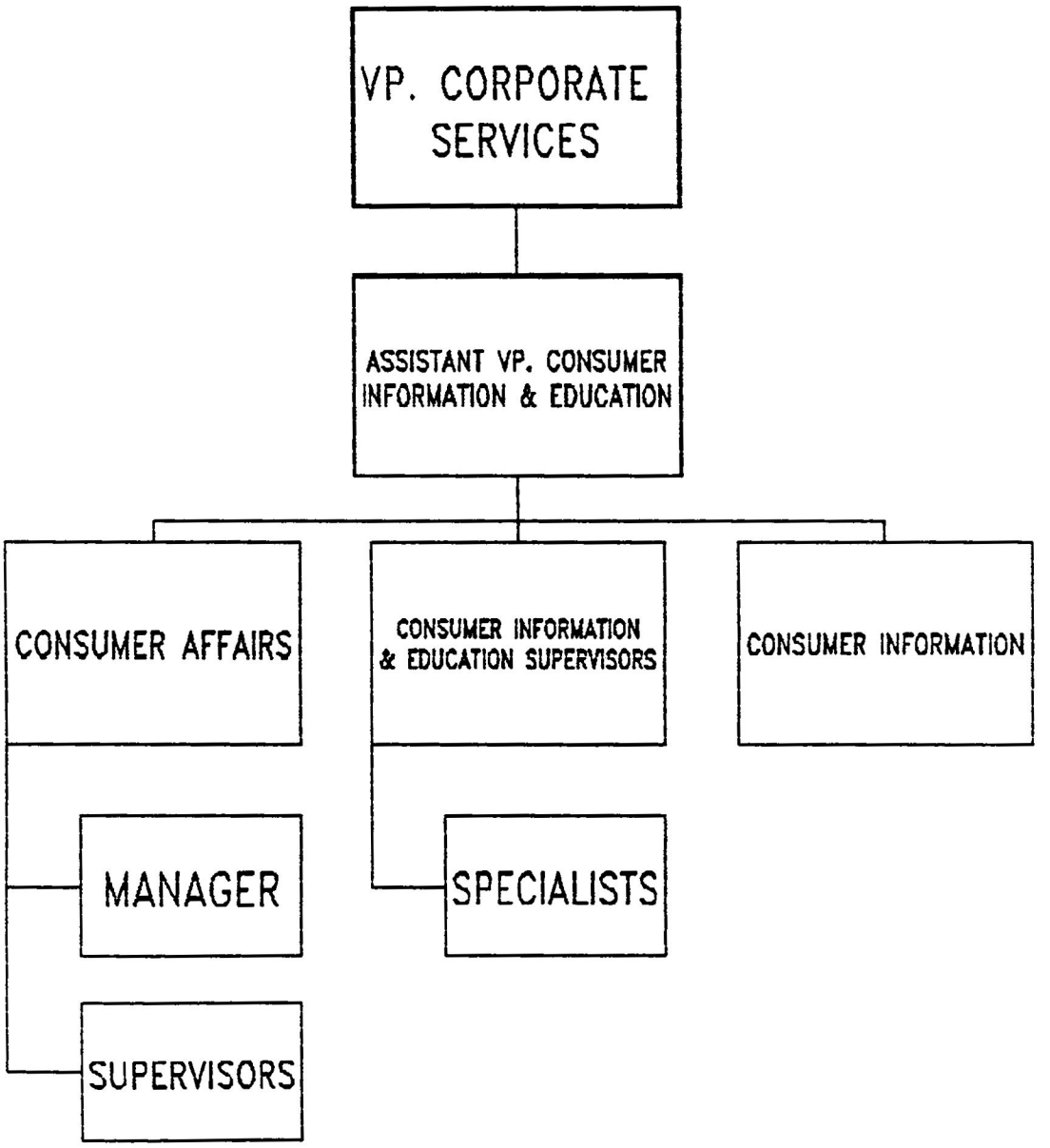


concerning customer matters. Coordinates customer relations training and acts as trouble-shooter on customer relations problems. Serves as court-of-last resort on customer complaints.

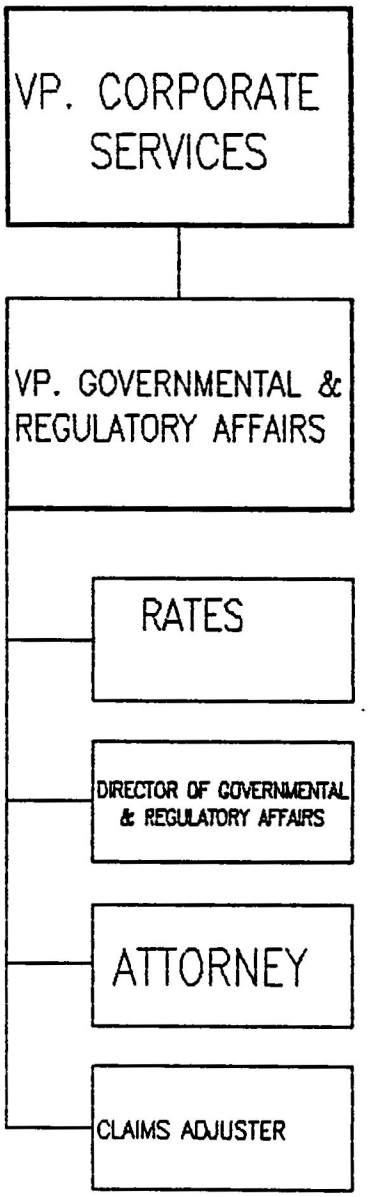
2. Division Consumer Information and Education Supervisor provides programs and other informational services of community groups. Works with schools, including loan program and class presentations. Oversees and supports Organization sales activities.
   a. Consumer Information and Education Specialist presents programs to school and adult groups. Makes home calls to customers needing utility equipment instruction. Maintains contacts with schools and community groups.
3. Manager-Consumer Information develops consumer oriented print and audio-visual materials. Coordinates production of Consumer Information and Education materials. Serves as information source for division Consumer Information personnel, and helps determine educational goals for reaching consumers.

C. Director-Industrial Development responsible for directing and coordinating industrial development activities including prospect solicitation, research and site selection. Maintains economic, building, and site data on all towns in service area. Serves as liaison with statewide developers (see Figure 13).

REGIONAL UTILITY ORGANIZATION
CONSUMER INFORMATION AND EDUCATION
FIGURE 15



REGIONAL UTILITY ORGANIZATION
GOVERNMENTAL & REGULATORY AFFAIRS
FIGURE 16



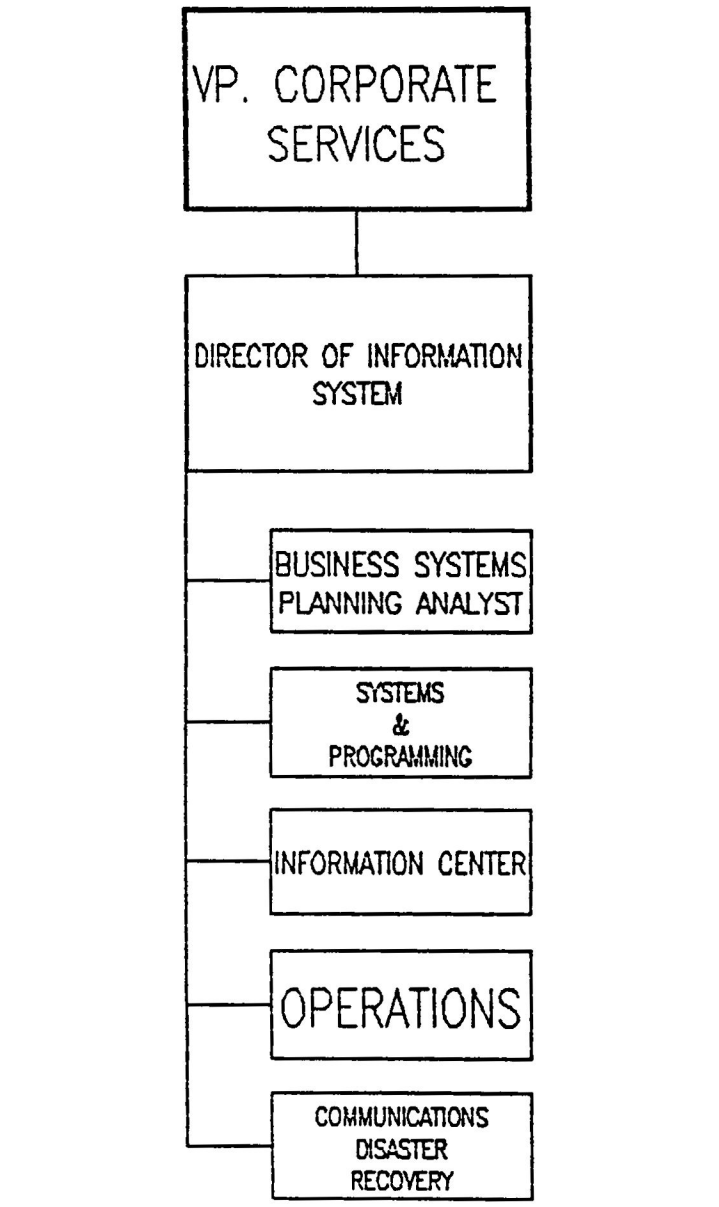
D. Vice President-Governmental and Regulatory Affairs serves as corporate representative in organization matters with federal and state governmental agencies. Monitors and participates in hearings and proceedings before committees, and serves as in-house counsel (see Figure 16).

1. Director-Rates directs rate department activities in the design, review, and administration of organization's rate structure. Oversees preparation of other rate related filings.
2. Director-Governmental and Regulatory Affairs initiates, monitors, and encourages legislation and regulations which are favorable to the Organization and its customers. Develops and maintains liaison with the General Assembly and commissioners of staff.
3. Attorney advises corporate officials on legal matters as required. Drafts and reviews all contracts for goods and services, and provides interpretations of rules and regulations of corporate matters affected by legal requirements.
4. Claims Adjuster investigates, negotiates and settles general liability claims, overall administration of state Workers Compensation Program, organization and consolidation of insurance schedules and other related self-insurance programs. Reviews all claims litigation affecting out of court settlements.

E. Director-Information Systems directs information systems activities; including systems analysis, programming, and computer and auxiliary operations. Controls policies and procedures, technical standards, methods and priorities. Serves as liaison with other departments. Also responsible for voice and data communications, and mail room activities (see Figure 17).

1. Senior-Business Systems Planning Analyst responsible for applications systems analysis and programming activities, feasibility studies, time and cost estimates. Establishes and implements new or revised application systems and programs, and assists in projecting software and hardware requirements.
2. Manager-Systems and Programming supervises activities of all applications and software systems analysis and programming personnel for a major project, two or more smaller projects, or a small department. Receives policy level direction regarding standards and budgetary constraints.
3. Manager-Information Center is responsible for ad-hoc requests from user departments, personal computer implementation and training and as ad-hoc requests for PC programs. Trains users on all technical applications and provides user liaison.

REGIONAL UTILITY ORGANIZATION
INFORMATION SYSTEMS
FIGURE 17



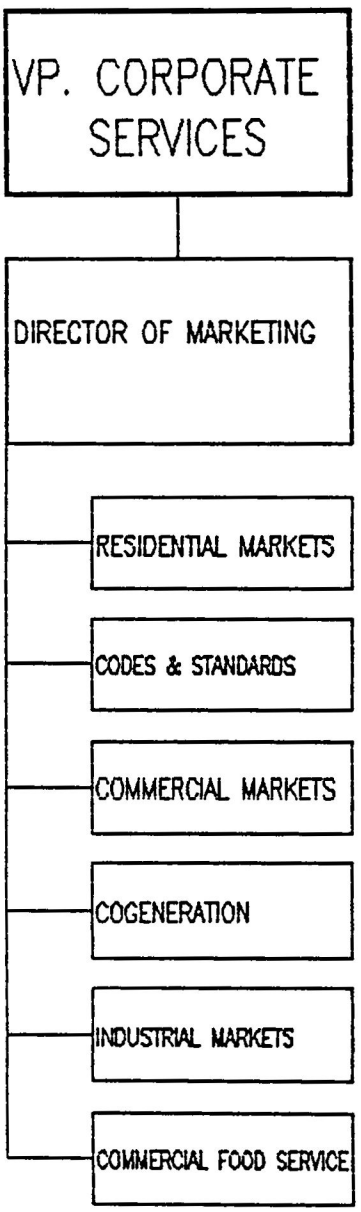
4. Manager-Operations responsible for operations activities including computer operations, data entry, data control, mail room, and operations support. Assigns personnel to projects and directs activities. Evaluates their work and prepares performance reports.
5. Manager-Communications Disaster Recovery responsible for all telecommunication activities including planning, designing, installing and maintaining on-line voice command data communication networks. Coordinates telecommunications software, hardware and systems capabilities.

F. Vice President-Civic Affairs oversees civic affairs and community service activities for the organization. Liaison with city,county, chambers of commerce, and charitable organizations in the service area. Handles contributions to charities and educational institutions. Participates in fund drives and community involvement (see Figure 13).

G. Director-Marketing develops and coordinates all the organization's marketing plan throughout the service area to optimize sales of utility and improve overall load factor (see Figure 18).
1. Director-Residential Markets develops and implements program designed to achieve organization marketing objectives for residential markets. Supervises energy wise heating and air conditioning contact programs.

2. Director-Codes and Standards provides technical support to organization's sales force on building codes, standards and regulations. Represents the organization in developing code amendments to allow installation of modern utility equipment.
3. Director-Commercial Markets develops and implements programs designed to achieve organization marketing objectives for commercial markets.
4. Director-Cogeneration promotes the use of utility cogeneration to commercial and industrial customers and provides technical support to organization sales force.
5. Director-Industrial Markets develops and implements programs designed to achieve organization marketing objectives for industrial markets. Provides technical expertise to employees engaged in the sale of utility to commercial and the industrial customer.
6. Director-Commercial Food Service promotes the use of utility to the commercial food service industry and provides sales assistance to the organization's sales force.

REGIONAL UTILITY ORGANIZATION
MARKETING
FIGURE 18



DIVISION ORGANIZATION

Vice President of Divisions liaison between the functional heads and division managers. Coordinates all division activities to ensure policies, rules and regulations, and directives are consistent. Handles leasing of new and renewal buildings and set priorities for all new building construction.

The Division Manager directs and coordinates all division activities consistent with organization policy and objectives. Oversees all functions within the division including service, distribution marketing, customer service, office administration, meter reading, and collections. Responsible for safety, training, and employee matters. Local property Managers have the same responsibilities within their area as division managers.

APPENDIX B

SURVEY INSTRUMENT

QUESTIONNAIRE

COMPUTER UTILIZATION QUESTIONNAIRE

INSTRUCTIONS:

Please answer the following questions. For your convenience, I have defined below selected terms that are used in this questionnaire.

BUDGETING: Using a computer to estimate income and expenditures for specific periods of time.

COMMUNICATION: The process of transferring information in the various media from one point, person, or device, to another.

DATA BASE: A comprehensive collection of libraries of data.

HUMAN FACTOR: An individual's attitudes, feelings, kindnesses and emotions.

PAYROLL: A list of employees and their wages.

SCHEDULE: A specific listing of job tasks to be performed within a specified time period.

WORD PROCESSING: Using a computer and printer to edit, format and print text.

PART A: COMPUTER INVOLVEMENT

To what extent do you use computer technology in carrying out your job tasks?

1. Are you using computer paper reports in your job? ___ YES ___ NO

2. Are you using a computer terminal screen in your job? ___ YES ___ NO

3. What kind of software is used in your department? (Please check all that apply)

___ Schedule ___ Communication ___ Data Base
___ Payroll ___ Word Processing ___ Budgeting
___ None
___ Others (Please identify): _____

4. What software would your department like to use? (Please check all that apply)

___ Schedule ___ Communication ___ Data Base
___ Payroll ___ Word Processing ___ Budgeting
___ None
___ Others (Please identify): _____

5. Has your department experienced any limitations in using computer software?

___ Yes (Please check all that apply.)

___ Lack of familiarity with different software packages.
___ Limited financial resources.
___ Lack of skills.
___ Limited time.
___ Others (Please identify and comment): _____

___ No

6. Please identify possible usages which could be made of the computer technology in your department. (Please check all that apply)
   ____ to handle payroll and help eliminate payroll problems.
   ____ to send and receive messages from one employee to another.
   ____ as a job matching tool to help identify the best qualified person for the job.
   ____ Others (Please identify and use reverse side if additional space is needed):

7. Please identify any principal factors below which you think adversely affect the application of computer technology at the managerial level. (Please check all that apply):
   ____ It has limited application.
   ____ It ignores the human factor.
   ____ It is very complicated to understand.
   ____ Others (Please identify and use reverse side if additional space is needed):

PART B: COMPUTER SATISFACTION SCALE

We would like to know to what extent you are satisfied with the use of computer technology in your organization. Please use the scale below which ranges from 1 through 7 as shown for responding to the questions below.

KEY:
1 ——— Strongly Disagree
2 ——————— Disagree
3 ——— Slightly Disagree
4 ——————— Neutral
5 ——— Slightly Agree
6 ——————— Agree
7 ——— Strongly Agree

Circle only **ONE** number for each question ranging from 1 to 7 according to the above key.

1. The computer may cause a person to lose his job.	1 2 3 4 5 6 7
2. Communication is improved through the use of computers.	1 2 3 4 5 6 7
3. Managers increase their familiarity with their subordinates' job performance by using computers.	1 2 3 4 5 6 7
4. Managers maintain a more accurate and immediate measurement of the level of productivity of their subordinates through the use of computer technology.	1 2 3 4 5 6 7
5. The introduction of computers in the work place requires that managers employ persons skilled in computer usage.	1 2 3 4 5 6 7
6. Our computer system is frequently down.	1 2 3 4 5 6 7

7. Our computer system responds to my department's request very quickly. 1 2 3 4 5 6 7

8. Our computer system requires extensive typing. 1 2 3 4 5 6 7

9. The slow responses of our computer system cause my department delays in carrying out job tasks. 1 2 3 4 5 6 7

10. Communication software is important in my department. 1 2 3 4 5 6 7

11. Communication software enables my subordinates to keep currently abreast of developments in my department. 1 2 3 4 5 6 7

12. Communication software is not applicable in my department. 1 2 3 4 5 6 7

PART C: ADR/eMAIL SATISFACTION SCALE

ADR/eMAIL is a communication software using computers to communicate between managers and their employees. If you do not use this software please do not complete this section of the questionnaire. However, if you do use this software please answer the following questions. Indicate how you feel about eMAIL by using the previous scale which ranges from 1 (strongly disagree) to 7 (strongly agree).

1. I enjoy using eMAIL. 1 2 3 4 5 6 7

2. I find eMAIL boring. 1 2 3 4 5 6 7

3. I find eMAIL good for my job tasks. 1 2 3 4 5 6 7

4. I find eMAIL creative. 1 2 3 4 5 6 7

5. I find eMAIL pleasant to work with. 1 2 3 4 5 6 7

6. I find eMAIL useful for my job. 1 2 3 4 5 6 7

7. I find eMAIL challenging. 1 2 3 4 5 6 7

8. eMAIL is frustrating to me. 1 2 3 4 5 6 7

9. I find eMAIL simple. 1 2 3 4 5 6 7

10. I find eMAIL easy to use. 1 2 3 4 5 6 7

11. I find eMAIL hard to learn. 1 2 3 4 5 6 7

12. eMAIL requires too much time to learn. 1 2 3 4 5 6 7

13. I have the feeling of accomplishment after I use eMAIL. 1 2 3 4 5 6 7

14. I do not like the idea of using eMAIL. 1 2 3 4 5 6 7

15. I waste a lot of time using eMAIL. 1 2 3 4 5 6 7

16. I am happy to use eMAIL. 1 2 3 4 5 6 7

17. I save plenty of time by using eMAIL. 1 2 3 4 5 6 7

18. I have more control of my mail and messages by using eMAIL. 1 2 3 4 5 6 7

19. eMAIL gives me a sense of confidence. 1 2 3 4 5 6 7

20. eMAIL is confusing to me. 1 2 3 4 5 6 7

PART D: PERSONAL DATA

Please check:

AGE:

_____ Under 30
_____ 30 - 39
_____ 40 - 49
_____ 50 - 59
_____ 60 - 69
_____ 70 or over

SEX:

_____ Male
_____ Female

EDUCATIONAL BACKGROUND:

_____ Less than college
_____ Bachelors degree
_____ Master
_____ Doctorate
_____ Other

How long you have been at your present job?

_____ Under 1 year
_____ 1 year - 3 years
_____ 3 years - 6 years
_____ 6 years - 9 years
_____ Over 9 years

How many employees do you supervise in your department? _____

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